EMICAL
IBRARY

The Success of All Worthy Endeavor Requires That Those Who Further It Present a United Front and Have the Backing and Strong Support of Those They Represent.

Vol. XVII, No. 11 NOVEMBER, 1928

JOURNAL
OF THE
AMERICAN PHARMACEUTICAL ASSOCIATION

TRADE MARK

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CONTENTS

Frontispiece and Sketch—Emil A. Gessner 1071
Editorial:
A Pharmacy Corps in the U. S. Army 1072
The Pharmaceutical Syllabus 1074
An Important Question of Pharmacopœial Interpretation 1076
Scientific Section:
The Pharmacopœia of the United States—Cook 1078
Stability of Homatropine Hydrobromide Solution—Pittenger and Krantz, Jr. 1081
Mercuric Iodide Determination in Tablets—Moraw 1084
The Toxicity of Thallium Sulphate—Munch 1086
The Botanical Origin of American Peppermint—*Mentha Piperita* L.—Bacon 1094
Oenanthe Sarmentosa—Goodrich and Lynn 1096
Bibliography of Pharmaceutical Research—DuMez 1105
"Trench Mouth" or Vincent's Infection 1109
Tin-Plated Lead Tubes, Their Usefulness as Containers for Toilet Products—Van Winkle and Christiansen 1110
Department of Business Management:
Comments, Questions and Suggestions Are Invited and Welcome 1113
What Standardization in Druggists' Glassware Has Done for the Glass Manufacturers 1113
Three Unusual Prescription Formulas—Terry 1115
Some Suggestions for Simplification of Seltzer's Procedure in Prescription Pricing—Seltzer 1117
An Interesting Emulsion—Scoville 1119
Department of the National Association of Boards of Pharmacy:
Legislating for Pharmacy 1121
Culled from Many Sources 1122
State Board News 1122
Department of the American Association of Colleges of Pharmacy:
Outside Preparation for Laboratory in Dispensing—Cox 1125
The Sections of the American Pharmaceutical Association 1127
Proceedings of the Local Branches 1149
Committee Reports:
Report of American Pharmaceutical Association Committee on U. S. Pharmacopœia (1928)—Kebler 1152
International Pharmaceutical Federation 1157
Editorial Notes 1158
Obituary 1161
Personal and News Items 1162
Societies and Colleges 1165
Legal and Legislative 1168
Book Notices and Reviews 1171
Advertising—Cover Pages 2, 3 and 4 and pp. I–XXII.

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THE 77th ANNUAL MEETING WILL BE HELD AT RAPID CITY (BLACK HILLS), SOUTH DAKOTA, DURING WEEK OF AUGUST 26, 1929.

The 1929 Meetings of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, Conferences of Pharmaceutical Association Secretaries will also be held at Rapid City, [illegible]me time and place.

For Association Roster and Roster of the Boards of [illegible]armacy, of Officers of Pharmaceutical Associations, Local Branches, see pages x, xii, xiv, etc.

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TO THE MEMBERS OF THE BRANCHES OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

May I suggest, as a plan of action for the present year, the following:

That each A. PH. A. Branch secure for each of its programs this year addresses from at least two men who have been successful in the conduct of independent drug stores over a period of years; stores which have been giving distinctive professional services to the physicians and public, tributary to their locations.

That these men show, in the light of their own experience, how they conduct their business so as to show eminently satisfactory net profits, while having uppermost in thought and action the best service to the public rather than creation of a large volume of sales.

Further, I would like to suggest that, beginning with the first State Pharmaceutical Association convention and continuing throughout the year, the A. PH. A. Branch nearest that State Association meeting send at least two members to speak upon each occasion; these two members to have credentials as representatives of the A. PH. A.; and to have been selected as having the qualifications previously set forth.

This in effect would materially change the character of the average program. It would introduce to many people the type of retailer who has of late been pushed into the background; he who has been successful in a professional way rather than the so-called business expert or the man connected with outside enterprises, who is especially interested in preaching the creation of a large retail volume for what perhaps might be termed selfish reasons.

So much has been said in recent years of volume creation that the idea would seem to prevail that it alone is paramount. So much has been said that the men doing a professional type of business have not had the opportunity of a hearing. A study of some recent programs will reveal this situation. Actions tend to follow lines of thought and to give the professional pharmacist a hearing upon all possible occasions would tend to bring about a more healthful trade condition.

Not only is this true of the spoken influence but also of the press. To preserve or to rebuild a healthful condition of affairs for both the retail and wholesale branches of pharmacy, there must necessarily be admitted to print a different type of writer in our professional journals as well as a different type of person to address our various pharmaceutical associations.

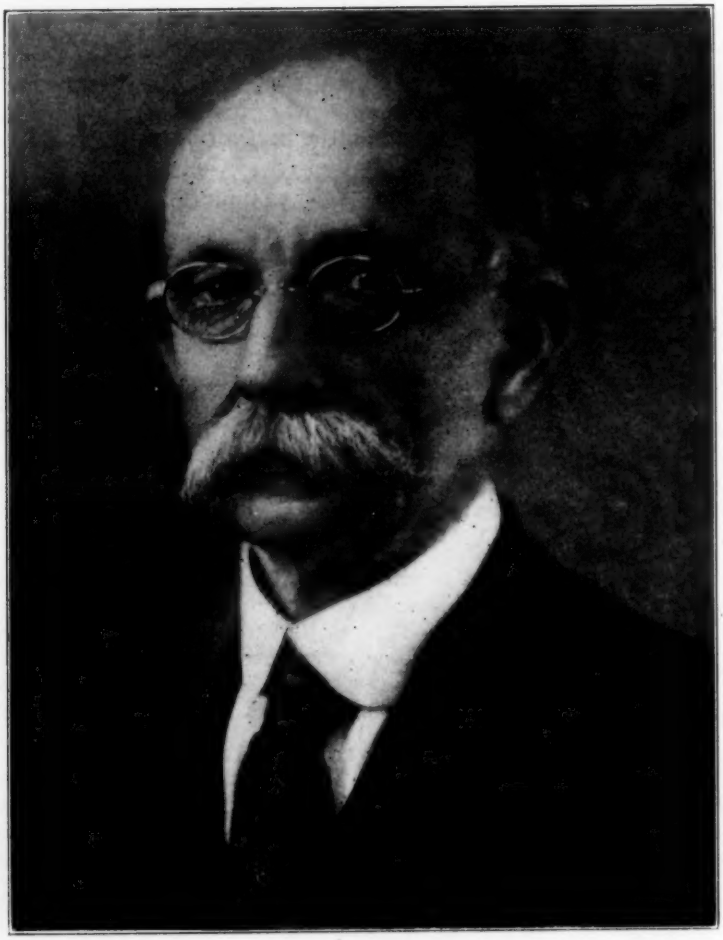
In my judgment this change can be brought about and it can be brought about more quickly by the attention and coöperation of the ASSOCIATION Branches than in any other way.

Let us talk up the Profession of Pharmacy and not let it be submerged from sight in a mad maze of merchandising.

May I expect each one of the branches to join whole-heartedly in this plan?

D. F. JONES, *President.*

Watertown, S. D.



EMIL A. GESSNER.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. XVII NOVEMBER, 1928 No. 11

EMIL ADOLPH GESSNER.

Emil A. Gessner entered the drug business in the store of John H. Klock, at the corner of Chapel & Church Sts., New Haven, Conn., in 1860; later, he became partner in the business. He purchased the drug store in the old Elliott House, in 1877, and four years later acquired Apothecaries Hall, of which, at the age of 82 years, he is still the owner, actively carrying on the business. The medicines of that period were prepared according to one or the other of a number of European pharmacopœias and dispensatories, and Apothecaries Hall was founded by a group of local physicians, with the idea of standardizing the drugs and preparations entering into their prescriptions. During the earlier years the apothecary shop was under the management of a Mr. Bears; with the establishment of the United States Pharmacopœia, a purpose which brought Apothecaries Hall into existence was accomplished, and the business was sold to Samuel Noyes, who carried it on until 1881, when Mr. Gessner purchased the store.

The writer is indebted to S. S. Gessner, a son, for the data of this sketch and also for photostat copies of Prescription Book pages, showing prescriptions of 1831. Mr. Gessner has a show globe, a pair of scales, a number of bottles, jars, mortar and pestle—part of the original equipment of Apothecaries Hall.

Mr. Gessner was appointed to the first Connecticut Board of Pharmacy and as member of two succeeding boards. He is a charter member of Connecticut Pharmaceutical Association and held the presidency for two terms. For a number of years he served the City of New Haven as alderman and for three terms on the Finance Committee of the Board of Alderman. He is a member of the New Haven Grays and of the Second Company of the Governor's Foot Guards and has been Captain in both organizations. In 1876, he was in command of the former when the members, in a body, attended the Centennial celebration in Philadelphia.

In 1926, our veteran member celebrated his 80th birthday, and his 50th wedding anniversary; in the same year he was the guest of Connecticut Pharmaceutical Association, when that organization celebrated its Golden Anniversary, and the conclusion of the first 50 years of membership of Mr. Gessner; also, he was the guest of the New Haven Grays on their trip to the Sesquicentennial. We congratulate him on the anniversary of his 50th anniversary as member of the AMERICAN PHARMACEUTICAL ASSOCIATION.

EDITORIAL

E. G. EBERLE, EDITOR 10 West Chase St., BALTIMORE, MD.

A PHARMACY CORPS IN THE U. S. ARMY.

THE pharmacists who gathered at Portland, Maine, in August had presented to them the proposition of the formation of a Pharmacy Corps in the U. S. Army, and there gave their whole-hearted approval to the proposition and dedicated the AMERICAN PHARMACEUTICAL ASSOCIATION to the task of bringing such a branch of the Medical Department of the Army into existence. A tentative bill was presented and discussed, and this was referred to a committee which later recommended that the provisions of the bill be adopted in principle. The report of this committee was approved.

The American Association of Colleges of Pharmacy endorsed the proposition at the same time, and have appointed a committee to coöperate with the committee of the A. PH. A. The National Association of Boards of Pharmacy, also in session at the same time and place, endorsed the bill by resolution, and a committee from that organization will work with the A. PH. A. committee. The Conference of Pharmaceutical Association Secretaries also endorsed the bill and will lend its support. Several of the Sections of the A. PH. A. took action endorsing the proposition.

At San Francisco, in September, the National Association of Retail Druggists put its stamp of approval on the measure by the adoption of a resolution in which the proposition was endorsed. Representative Clyde Kelly, of Pennsylvania, who was a guest of the N. A. R. D. during this convention, was impressed with the merits of the proposal and later endorsed the plan in an interview which appeared in the *United States Daily*.

The National Association of Wholesale Druggists, in convention in Atlanta, early in October, endorsed the effort; and later in the month, in Philadelphia, the Federal Wholesale Druggists' Association gave its stamp of approval.

Wherever drug organizations have met and have had an opportunity to examine the proposition they have without hesitation shown their willingness to help secure the necessary legislation. Six of the constituent member organizations of the National Drug Trade Conference, which meets in Washington in December, have already approved the plan. With such wide-spread approval, it would seem that pharmacy is solidly behind the effort, and the committee is going ahead with plans to shape the legislation for introduction in December.

There is a fly in the ointment, however, as is usually the case when reforms are contemplated. In this case the Surgeon-General of the Army is decidedly opposed to the formation of a pharmacy corps and in response to a request for a conference with the committee he expressed his belief that this was unnecessary. His plan would keep pharmacy as effectually smothered as it has been, in the army, for many decades past. A few pharmacists might find places in the formation of an auxiliary corps, in which they might work their way to commissioned rank, but as we understand it, would not be commissioned as pharmacists, but as administrative officers. These commissions might be attained, if we are correctly informed,

after two years' service as privates and after passing certain specified examinations in branches foreign to pharmacy. This plan appears to us to be merely one in which a pharmacist is not prohibited from working up to commissioned rank, but he is not promised any such promotion because he is a pharmacist. We should refuse to be satisfied with such an arrangement. What we expect is a proper recognition of pharmacy because of the genuine worth of pharmacy to the army.

To-day pharmacy is not deemed worthy of proper recognition in the army. That is perfectly plain from the manner in which it is handled. There are few, if any, graduate registered pharmacists serving as pharmacists in the army. There are a few registered pharmacists serving as pharmacists in the army. There are an unknown number of practically untrained men, drawn from the ranks, who are dispensing the medicines and filling the prescriptions in the army. Why does this deplorable condition exist? There are several reasons. First, it may be said that there are two kinds of doctors in the army, those who are practicing medicine, and those who are holding down swivel chair jobs, and the latter type have no need for the coöperation of trained pharmacists in their sort of work. They give voice to the idea that trained pharmacists are not needed because the army uses "canned medicines" and that no knowledge of pharmacy is necessary to dispense them. We have an idea that the army doctors who are actually practicing medicine would express themselves otherwise if they thought it expedient to declare themselves on the subject at all, and would welcome an adequate pharmaceutical service. Then there are several other considerations. Among these may be mentioned the important one that, in order to serve as a pharmacist in the army, a pharmacist must enlist as private at thirty dollars a month, or some such munificent remuneration. This is not an appealing offer. He can make more than that in a week in civil life and not occupy an inferior position while doing so.

Now, what is the remedy to this situation? Certainly not the plan of the Surgeon-General, which will merely perpetuate the present unsatisfactory arrangement, with a few possible chances to reach commissioned rank after two years of service. That plan is not going to build up a satisfactory pharmaceutical service. The plan of the pharmacists proposes the formation of a corps in the army composed of pharmacists who will serve as pharmacists and coöperate with the army physicians who are practicing medicine whereby guarding the lives of the men in the service and their families, just as by law in the several states, the pharmacists who will do the pharmaceutical work in the larger centers will be men of commissioned rank, entering as first lieutenants and having open to them advancement up to the rank of major. These men will come first from the present army pharmacists who have the qualifications, and after 1932 will be filled by graduate pharmacists who have the necessary qualifications from four-year pharmacy schools. The corps will be headed by a pharmacist and will be a branch of the Medical Department of the army just as is correspondingly provided for medicine, dentistry, nursing and the veterinarians. This plan, in our opinion, offers the remedy.

If pharmacists expect to see pharmacy come into its own in the army every pharmacist must take a part. Pharmacists will not be handed recognition on a silver platter. On the contrary, there will be the strongest opposition on the part of those who have in the past successfully lulled us into inaction or successfully blocked our legislative efforts. Every pharmacist in the country should have

pride enough in his profession to bestir himself and help remove from the profession the onus of inferiority with which it is stamped by those in the army and in whose hands its destiny at present reposes.

We believe that the lives of the men in the army and the lives of their families are just as valuable as the lives of civilians and should be as adequately safeguarded in a pharmaceutical way. The doctor who is practicing medicine in the army is entitled to more skilled pharmaceutical coöperation than is at present provided for him, and, we believe would welcome it. The question of whether there is need for trained pharmacists in the army could be answered by these practicing physicians in the army, but in this case they hesitate to answer. There is need for better pharmaceutical service in the army.

There is not a pharmacist practicing anywhere in this country who at some time or other has not met situations in filling prescriptions requiring independent judgment and action. A failure to meet the demand of such a situation is sometimes dangerous to the patient. This is not maudlin sentimentality. Every pharmacist knows what we are talking about. The army physicians can make mistakes just as readily as others. Who catches the mistakes of the Army doctors? Can the untrained man, transferred from the ranks to the dispensary, be relied upon to do so? We fear not. At any rate, the men in the service ought to be given the benefit of the doubt.

Just so long as army doctors practice medicine and write their orders or prescriptions and have them filled in army dispensaries or hospital pharmacies there is need for the best pharmacists obtainable. Anything less than the best pharmaceutical service is unfair to the army physician and an injustice to the men in the service.—A. L. I. WINNE.

THE PHARMACEUTICAL SYLLABUS.

BECAUSE of the pressure of his present executive duties, Dean Theodore J. Bradley, of Boston, Massachusetts, is compelled to relinquish the Chairmanship of the Pharmaceutical Syllabus Committee, after many years of service in the position. Prof. John G. Beard, of Chapel Hill, North Carolina, has been unanimously elected as the new Chairman of the Committee and immediate steps will be taken to proceed with the preparation of a fourth edition of the Syllabus.

When the prerequisite of graduation from a recognized college of pharmacy was adopted in New York State, in 1904, it became necessary to formulate the basis of recognition of colleges of pharmacy, and the need of an outline of a standard minimum course was felt. This led to the organization of the Committee, which prepared the first edition of the Pharmaceutical Syllabus, and this first edition was published and distributed free of charge, by the New York State Board of Pharmacy, in 1910. Soon after the first edition appeared, the AMERICAN PHARMACEUTICAL ASSOCIATION, the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy were each asked to appoint seven members of the committee and to contribute to the expense of the work, which they have done since that time. Since the Committee has been appointed in this way, it has prepared and distributed the second and third editions of the Syllabus. All the work has been done without compensation to anyone and by

the practice of rigid economy, the expenses for printing, postage and supplies have been met by the sale of the book and the small contributions from the three organizations which appoint the members of the Committee.

Dean Willis G. Gregory, of Buffalo, New York, was Chairman of the Committee during the preparation of the first and second editions of the Syllabus, on which a large part of the work was done by Dr. Henry L. Taylor, of Albany, N. Y. Dean Bradley was elected Chairman in 1917, and the third edition was prepared and distributed while he has been Chairman. The lists of members of the Committee have been published frequently during the twenty-two years of its existence, and they include the names of many leading workers in pharmacy during this period.

The Syllabus has been of value to pharmacy in several directions and its inception marks one of the first organized efforts toward establishing definite standards for the education and registration of pharmacists. Before it was established, there was no standard to insure that the course in pharmacy as given in various colleges was similar or that the examinations as given by boards of different states were based on the same subjects. More important still, there was no certainty that the examination given by a board covered what the student had been taught in the college. The fourth edition will probably prove to be of great assistance in the proposed pharmacy survey and in the standardization of pharmacy schools.

Many differences of opinion developed during the first few years of the work, and the first and second editions showed many evidences of compromises between extremes of opinion. The Committee has always realized the difficulty of its task and the impossibility of bringing out a book that would entirely satisfy anyone. For this reason, and others, the use of the Syllabus is optional and not obligatory. It tries to be helpful to those who need or desire its help and no one is required to use any part of it, excepting by his own opinion that it is helpful to him. Each edition has shown a marked improvement over the preceding edition, making the book more and more helpful to the colleges and boards of pharmacy. The increase in the minimum course in pharmacy from two to three school years, with a further increase to four school years by 1932, and the appearance of new editions of the United States Pharmacopœia and the National Formulary, make necessary a new edition of the Syllabus.

The report of the survey of pharmacy conducted by the Commonwealth Fund and published under the title "Basic Material for a Pharmaceutical Curriculum" will be of great assistance in the forthcoming revision, as it places at the disposal of the Committee information as to what the pharmacist is called upon to do in the every-day practice of his profession. In other words, the Syllabus can be based on facts established by a study of the pharmacist in action and of what he needs to know in order to discharge the duties expected of him.

Considerable preliminary work on the revision has been done under the chairmanship of Dean Bradley, but he has found it impossible, under present conditions, to put aside other pressing duties to work on the Syllabus, and has insisted that a new chairman be chosen who can devote sufficient time to the work to bring out a new edition soon. Professor Beard did not seek the place, but he has shown that he has the requisite qualifications for the work and has accepted the chairmanship because of the opportunity it offers for service to pharmacy and to pharmaceutical education.

AN IMPORTANT QUESTION OF PHARMACOPŒIAL INTERPRETATION.

THE question "Is there any official or legal authorization for the making of a U. S. P. fluidextract from a drug that is not of U. S. P. character" has been answered in the negative in hundreds of cases, by federal and state authorities, and this answer has been sustained scores of times, when carried to the courts. It would seem that the reason for this decision must be valid and, if so, must apply to all official drugs. These drugs naturally fall into three classes:

A.—Those for which the descriptions and standards are only physical, Buchu being a typical illustration. This must be of the species named and must contain not more than a stated percentage of stems or of other foreign organic matter. It must agree with the description of shape, size, color and surface of leaf and with the taste and odor. Unless these physical standards are to be enforced, any leaf that grows may be sold as buchu, and buchu leaves may be impure in any way and unfit for medicinal use. It is not likely that any question will ever be raised against the decision that fluidextracts of this class must be made only from drugs that comply with the physical requirements of the Pharmacopœia and Formulary.

B.—There is a limited number of drugs on which are imposed all the above physical requirements and, in addition, the possession of a stated percentage of active constituent, to be determined by chemical assay, Belladonna leaf being a typical illustration of this class. This drug must not contain more than 3 per cent of stems over 10 mm. (2.5 of an inch) in diameter and must yield not more than 3 per cent of acid-insoluble ash. All these, with shape, color, etc., are physical standards, the ash limit being to restrict the admission of dirt. In addition to all this, the drug must yield, on chemical assay, at least 0.3 per cent of the alkaloids of belladonna leaves. The question before us is whether, if a lot of belladonna leaves yields the required percentage of alkaloid, a U. S. P. fluidextract can be made from it, when it does not comply with the physical requirements stated. The question might fairly be raised when the only defect is an excess of stems or sand, yet it has never been entertained by the authorities when there was a material variation from the standard. The owner is always compelled to remove these defects before his drug will be admitted to use. If the defect is one of mouldiness or decay or discoloration in drying, or water damage, he will not be permitted to use it at all, in the making of a fluidextract. In my long experience, I have never known the authorities to render any other decision. However, we are not reduced to the necessity of depending on such authority, as there is no rational ground for any other view. The assay determines only that there is the proper amount of active constituent. It is no evidence, whatever, that other and dangerous substances are not present. I have frequently seen belladonna leaves adulterated with enough of the deadly poke-leaf to exclude them from legitimate use, yet there was the full percentage of alkaloids of belladonna. If there were not enough of the alkaloid, the ruling that the manufacturer might use a larger amount for making his fluidextract, and thus correspondingly increase the amount of poke-leaf, would be a deadly procedure. There are innumerable other objectionable articles, organic and inorganic, which could be included without impairment of the assay character. If, among all the readers of the JOURNAL, there is one who has the te-

merity to claim that the physical characters of drugs of this class can be disregarded in making fluidextracts, now is the time for him to raise his voice.

C.—The third class of drugs comprises those for which all the above physical requirements are provided, and which, in addition, must be biologically tested on an animal, to determine that they possess the requisite medicinal activity *for which that drug is employed and nothing else.* The test makes no reference to any other effect on the animal's system, no matter how deadly this may be. It carries no indication, whatever, of cleanliness or of purity; nothing, whatever; except the proper degree of one particular kind of activity. A typical illustration of this class is Digitalis Leaf which, in addition to all the physical characters named above, and these carried out in great detail, even to microscopical features, must be capable of producing a specified degree of a specified action within a specified time. One can easily name a dozen different things which could be added in dangerous amount, without modifying the particular action referred to, for example, pokeleaf, nux vomica or arsenic.

Here again we have a long series of decisions to the effect that the physical requirements must be met, and here we have also an unanswerable reason why that decision is right, but we have something else, of a far more compelling character to guide us. On page 1 of the "General Notices" of the U. S. P. it is stated that "Official preparations are to be made only from drugs that conform to the Pharmacopœial standards, definitions and descriptions." If these decisions and the statement quoted are correct, they must apply to all drugs of the Pharmacopœia, and if incorrect, the Revision Committee should employ such language as will eliminate all ambiguity or doubt.

H. H. RUSBY.

PASTEUR MONUMENT UNVEILED IN CHICAGO.

Among those who paid homage to Louis Pasteur at the unveiling of a monument in his memory—in Chicago, October 27th—was one man whose gratitude was not only general, for Pasteur's great services to humanity, but specific for the saving of his own life from rabies. This man was William T. Lane, who was a 14-year-old messenger boy in 1884 when a mad dog bit him and three other boys in Newark, N. J. Newark citizens raised a fund and sent them to Paris, where Pasteur cured them.

Lane stood at the unveiling of the 20-foot marble shaft in Grand Park and recalled for another generation a little wrinkled man, with kindly but piercing eyes and a black skull cap. He remembered and thanked Louis Pasteur for saving his life, the lives of his three friends and the lives of thousands of others the world over.

The French Choral Society, of Chicago, took part in the program and the French Ambassador to the United States, Paul Claudel, made a brief address, extolling the work of the scientist. Vice-President Dawes spoke of Pasteur's achievements in many fields.

Speakers were Dr. Frank Billings, Chairman of the Memorial Committee, which gave the shaft to Chicago; Edward J. Kelly of the South Park Board, who accepted it. The statue stands near the west end of the Field Museum.

ANTIPYRINE IMPORTS INCREASE.

Antipyrine imports into the United States have increased in recent years. During the first eight months of 1928 were entered for consumption 43,019 pounds, almost three times the quantity imported for consumption during the entire year of 1926.

SCIENTIFIC SECTION

THE PHARMACOPŒIA OF THE UNITED STATES.*

BY E. FULLERTON COOK.

Pharmacopœial interests at this period of the decade are likely to be at low ebb, as the book has settled into its place, and, without special emphasis, is quietly fulfilling its intended function.

It is at this stage of its life, however, that those who use it daily are most likely to discover methods or technique which do not fully meet the requirements or which may be advantageously replaced by a new or modified test.

When such is the case the Committee urges the prompt report of the facts, either directly to the Chairman or in a note or paper before an ASSOCIATION meeting, that it may find its way into the literature and be made available for the next revision.

The Digest of Comments.—As already announced, the AMERICAN PHARMACEUTICAL ASSOCIATION has agreed to include in the "Report on the Progress of Pharmacy," as printed in the Annual YEAR BOOK, abstracts of all references to Pharmacopœial subjects appearing in current literature, thus replacing the "Digest of Comments," now discontinued.

The 1926 volume of the YEAR BOOK will be the first in which special emphasis has been placed upon this class of abstracts and the plan seems to have special merit as, in large measure, a duplication of effort is avoided.

The New Spanish Edition.—The outstanding feature of the year in the Pharmacopœial field has been the appearance of the U. S. P. X in Spanish. This had been prepared by a Committee from the University of Havana consisting of Dr. C. Garcia Morales, *Chairman*, Dr. A. Mesa de Ponce, *Secretary*, Dr. Rosa T. Lagomasino and Dr. Sara Bastillo. Dr. José G. Diaz, who had translated the two previous editions, was unable to assume full responsibility for the translations because of ill health, but gave invaluable assistance in proof-reading and advice to the translators.

The official agent for the distribution of this Spanish Edition is the International Trade Papers, Inc., 2 West 45th Street, New York, N. Y. This firm are the publishers of *El Pharmaceutico*, a pharmaceutical journal in the Spanish language, circulating in all Central and South American Republics.

The retail price of the book, without postage, is $6.00.

Recognition of the appearance of this Spanish Edition was taken at the recent Pan-American Congress, at Havana, by means of a resolution.

Also through the joint action of Dr. Cumming, as Director of the Sanitary Bureau of the Pan-American Union, and the Board of Trustees, complimentary copies of the book are being presented to the libraries of the main Health Bureaus of all of the Central and South American Republics.

While the publication of the Spanish edition of the U. S. Pharmacopœia, now for three revisions, has been without monetary profit it has been a valuable service to our own Spanish-speaking colonies and to the Republic of Cuba, where it has

* Scientific Section, A. PH. A., Portland meeting, 1928.

been accepted officially. But it has also received very general distribution in the Republics of the Pan-American Union and should be a potent influence on this continent in establishing a greater degree of uniformity in the strength and nomenclature of standard and medicinal products, than would be otherwise possible.

The U. S. P. Exhibit at the A. M. A. Meeting.—The Board again authorized a U. S. P. Exhibit as a part of the Scientific Section at the A. M. A. meeting. This year it was held at Minneapolis and Dean Wulling and his associates were asked to prepare and take charge of the Exhibit.

The success of this exhibit has been fully reported in the pharmaceutical press,[1] and should encourage many pharmacists throughout the country, to make similar displays, especially if they are desirous of emphasizing their professional qualifications and of interesting the physicians of their community.

U. S. P. RESEARCH.

The special researches, planned over a year ago by the Executive Committee of Revision and approved and financed by the Board of Trustees have been making excellent progress.

While these studies have not been completed, it is expected that all will be finished and reported upon before the next U. S. P. Convention. In fact partial reports on some studies will be made this winter. The studies now under way are as follows:

The Assay and Variation in Strength of Strophanthin and the Digitalis-Group of Drugs.—Directed by Dr. C. W. Edmunds, of the University of Michigan, Ann Arbor, Michigan.

The Absorbability of Mercurial Ointments.—Directed by Dr. Torald Sollmann, of Western Reserve Medical School, Cleveland, Ohio.

U. S. P. Solubilities and Alkaloidal Standardization.—Directed by Dr. George D. Rosengarten.

Comparison of Chemical Tests and Assays.—Directed by Prof. H. V. Arny.

Color Standards for Solid Substances.—Directed by Prof. E. N. Gathercoal.

The Determination of Alcohol-Extractive.—Directed by Prof. E. N. Gathercoal.

Solution of Magnesium Citrate.—Planned and Directed by George M. Beringer.

Fluidextracts of Ipecac, Cinchona and Squill.—Planned and Directed by George M. Beringer.

OTHER RESEARCHES.

Many other studies of interest to the Pharmacopœia are now under way chiefly through industrial laboratories or voluntary workers. A study of the long list of pharmaceutical subjects now under investigation, as recently published by the National Conference on Pharmaceutical Research will reveal many subjects which have a direct bearing upon the U. S. P. revision.

There might specially be mentioned *a review of crystallographic terms* now used in the Pharmacopœia which has been undertaken by Prof. E. H. Kraus, of the University of Michigan.

A study of all U. S. P. petroleum products, especially with reference to their physical factors and tests, is under the direction of a Sub-Committee of the American Society for Testing Materials.

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[1] See JOUR. A. PH. A. for July, 628.

An Investigation of the Ergot Assay.—Dr. Nelson, of the University of Michigan, has been directing a study on this subject under a Fellowship established by the Upjohn Company.

A comparative study of assay methods is also being carried out on Fluidextract samples by the Hygienic Laboratory under Dr. Voegtlin's supervision, and on the same lots of Fluidextracts, by the Pharmacologic laboratory of the Food, Drug and Insecticide Administration at Washington.

These various reports on the Ergot assay should be of inestimable value to the next committee.

Cod-Liver Oil.—Dr. John F. Anderson is preparing a summary of the *situation* as it influences Cod-Liver Oil standards and Assay. This should serve as a basis for additional studies on this question when another committee is organized.

Histologic Terms.—Prof. Youngken and Prof. Wirth are coöperating in a study of histologic terms employed in foreign pharmacopœias for the purpose of unifying and harmonizing the terms and definitions employed by our pharmacopœia.

Foreign Pharmacopœias.—That important developments in recent foreign pharmacopœias may be made available for the next committee or for the actual comparisons of tests and methods at this time, translations have been made of the general articles and some other portions from the Swedish, Dutch and German Pharmacopœias and these are being published in the official Circulars. As other foreign Pharmacopoeias appear they will be similarly treated.

GEORGE M. BERINGER.

The recent death of George M. Beringer has left a vacancy in revision work which cannot easily be filled. The versatile character of his knowledge and training, his willingness to devote energy and time to the technical and scientific problems of pharmacy and his unbounded faith in the importance of pharmaceutical service, were large factors in the contributions he has made for over a period of at least thirty years. He will be greatly missed in all pharmaceutical circles and especially in Pharmacopœial work.

NEW MEMBERS.

The death of Dr. Henry Beates, Jr., about a year ago left a vacancy in the physicians group of the Committee and, as has been the custom and as authorized by the By-Laws of the Convention, the Committee has just voted for two new members. I have the pleasure and privilege of announcing the election to the Committee of Revision, of Dr. J. Leon Lascoff, of New York for the vacancy in the pharmaceutical group. Dr. Lascoff is too well known here for any introduction. The vacancy in the physicians' group has been filled by the election of Dr. John Phillips, an experienced and well-known internist, especially interested in therapeutics. Dr. Phillips is now associated with the Cleveland Clinics, Cleveland, Ohio.

As the end of the decade approaches there will doubtless be increased interest in Pharmacopœial work and it is hoped that the A. PH. A. Committee will again bring many valuable suggestions for the improvement of the next Pharmacopœia.

Now is the time to plan this program and for the purpose of bringing an unbiased viewpoint to the Revision, the members of the A. PH. A. Committee should not be members of the U. S. P. Revision Committee.

STABILITY OF HOMATROPINE HYDROBROMIDE SOLUTION.*

BY PAUL S. PITTENGER AND JOHN C. KRANTZ, JR.

In view of the fact that many oculists have noted different degrees of mydriasis with the same labeled strength solution of homatropine hydrobromide, it was thought advisable to determine whether this variation was due to deterioration or to variations in reaction of the pupils of different patients. It was necessary to determine if the solutions deteriorated with age and upon exposure to light of various wave-lengths. Also if these physical factors influenced these solutions chemically and to determine whether or not such changes are accompanied by changes in physiologic activity.

In order to determine the effects of various physical factors upon the solutions of homatropine hydrobromide, the following investigation was conducted.

METHOD OF STUDY AND RESULTS.

Physical Measurements.—A one per cent solution of homatropine hydrobromide U. S. P. was prepared for study of the isotonic value as compared with the tear. This solution showed a depression of the freezing point of 0.122° C. One and thirteen hundredths Gm. of sodium chloride added to 100 cc. of this one per cent solution yielded a product which gave a depression of the freezing point of 0.83° C. rendering the solution practically isotonic with the tear.

Solutions of homatropine hydrobromide were prepared in concentrations of 0.1 N., 0.01 N. and 0.001 N., the hydrogen-ion concentrations were measured electrometrically and the change in p_H upon standing and heating was determined.

Concn. of solution.	p_H when prepared.	p_H after 15 days.
0.1 *N*	3.172	3.65
0.01 *N*	3.875	5.835 Fungus growth
0.001 *N*	4.570	5.400
1.0% Isotonic with tear	4.387	4.42
		Boiled 5 min.
0.01 *N*	3.875	4.06

A solution containing one per cent of homatropine hydrobromide U. S. P. in plain distilled water and a solution rendered isotonic with the tear with sodium chloride were prepared and immediately physiologically tested by the Munch "Cat-Eye" method. After determining the physiologic activity of these solutions they were each divided into eight portions. One portion of each (A & A-1) was stored in flint ampuls without sterilizing. Another portion of each (B & B-1) was placed in flint ampuls and sterilized. Both portions were then placed on shelves in the laboratory to be tested at intervals of three months in order to determine the rate of deterioration under ordinary light conditions. In order to determine the effects of various wave-lengths of light upon these solutions five of the remaining six portions of each solution were placed in various colored quartz tubes while the sixth portion of each was placed in a plain pyrex tube. These twelve tubes were then irradiated with ultraviolet light by exposing for thirty minutes under an Alpine Sun Lamp and then retested in order to determine any changes in physiologic activity.

* Scientific Section, A. PH. A., Portland meeting, 1928.

Physiologic Measurements.—The solutions were tested by the "Munch Method for Biologic Assay of Miotics and Mydriatics."[1] This method consists in determining the smallest amount of a solution of the unknown required to produce the same degree of miosis or mydriasis as that produced by a standard solution of known strength.

As cats differ considerably in susceptibility to homatropine hydrobromide, each cat was first standardized by determining its susceptibility to the standard sample. A record was made of the minimum effective concentration for each cat, and used for comparison with the amounts of each unknown required to produce the same effects upon the same cat. In order to further eliminate variations in results due to variations in susceptibility five to nine cats were used for each test. Each animal received doses of concentrations ranging from 100 to 1000 mg. per liter. In order to conserve space only the minimum effective concentrations are given.

TEST NO. 1—SAMPLE A.

Ampul solution homatropine hydrobromide 1% in distilled water. Not sterilized. Original assay.

Cat. no.	Minimum effective concentration mg. per liter.
1	250
2	500
3	500
4	250
5	500
6	500
7	500
8	250
9	500

TEST NO. 2—SAMPLE A-1.

Ampul solution homatropine hydrobromide 1% isotonic with tear. Not sterilized. Original assay.

Cat. no.	Minimum effective concentration mg. per liter.
1	250
2	500
3	500
4	250
5	500
6	500
7	500
8	250
9	500

The above results show that the solution which was made isotonic with the tear and the solution prepared with plain distilled water were identical as to physiologic activity.

The ampuls containing the above solutions were then placed on a laboratory shelf and retested after three months with the following results.

TEST NO. 3—SAMPLE A.

Ampul solution homotropine hydrobromide 1% in distilled water. Not sterilized. Aged three months.

Cat. no.	Minimum effective concentration mg. per liter.
1	250
2	500
3	500
4	250
5	500
6	500
7	500
8	250
9	500

TEST NO. 4—SAMPLE A-1.

Ampul solution homatropine hydrobromide 1% isotonic with the test. Not sterilized. Aged three months.

Cat. no.	Minimum effective concentration mg. per liter.
1	250
2	500
3	500
4	250
5	500
6	500
7	500
8	250
9	500

[1] Munch, *Jour. A. O. A. C.*, 10 (1927), 383–386. "Pittenger's Biologic Assays," 2nd Edition, 158.

TEST NO. 5—SAMPLE B.

Ampul solution homatropine hydrobromide 1% in distilled water. Sterilized. Original assay.

Cat. no.	Minimum effective concentration mg. per liter.
1	250
2	500
3	500
4	250
5	500
6	500
7	500
8	250
9	500

TEST NO. 6—SAMPLE B-1.

Ampul solution homatropine hydrobromide 1% isotonic with tear. Sterilized. Original assay.

Cat. no.	Minimum effective concentration mg. per liter.
1	250
2	500
3	500
4	250
5	500
6	500
7	500
8	250
9	500

It will be noted from the above that sterilization at 15 lbs. for 15 minutes has no effect upon the activity of the homatropine, either in plain distilled water or in isotonic solution.

TEST NO. 7—SAMPLE B.

Ampul solution homatropine hydrobromide 1% in distilled water. Sterilized. Aged three months.

Cat. no.	Minimum effective concentration mg. per liter.
1	250
2	500
3	500
4	250
5	500
6	500
7	500
8	250
9	500

TEST NO. 8—SAMPLE B-1.

Ampul solution homatropine hydrobromide 1% isotonic with tear. Sterilized. Aged three months.

Cat. no.	Minimum effective concentration mg. per liter.
1	250
2	500
3	500
4	250
5	500
6	500
7	500
8	250
9	500

Both solutions are, therefore, effective in the same concentrations as when originally prepared showing that no deterioration occurred during the three-month aging period.

Samples of the sterilized ampuls B & B-1 were again tested after six months' aging and were found to be as active as when originally prepared. A fresh solution of the standard was prepared at the end of the three- and nine-month period and used to check the susceptibility of each cat. No change in the reaction of the animals to the drug could be noted as the minimum effective concentration for each cat was the same after three and nine months, respectively, as in the original assays. (Tests 1 & 2.)

The effects of exposure to various wave-lengths of light are shown by the following chart:

EFFECT OF VARIOUS WAVE-LENGTHS OF LIGHT UPON SOLUTION HOMATROPINE HYDROBROMIDE 1%.

Sample.	How prepared.	Container.	Original assay.	Assay after exposure for 30 minutes under an Alpine sun lamp.
C	In distilled water	Yellow quartz tube	Same as Test No. 5	Same as Test No. 5
C-1	In isotonic solution	Yellow quartz tube	Same as Test No. 6	Same as Test No. 6

D	In distilled water	Plain quartz tube	Same as Test No. 5	Same as Test No. 5
D-1	In isotonic solution	Plain quartz tube	Same as Test No. 6	Same as Test No. 6
E	In distilled water	Red quartz tube	Same as Test No. 5	Same as Test No. 5
E-1	In isotonic solution	Red quartz tube	Same as Test No. 6	Same as Test No. 6
F	In distilled water	Green quartz tube	Same as Test No. 5	Same as Test No. 5
F-1	In isotonic solution	Green quartz tube	Same as Test No. 6	Same as Test No. 6
G	In distilled water	Purple quartz tube	Same as Test No. 5	Same as Test No. 5
G-1	In isotonic solution	Purple quartz tube	Same as Test No. 6	Same as Test No. 6
H	In distilled water	Pyrex tube	Same as Test No. 5	Same as Test No. 5
H-1	In isotonic solution	Pyrex tube	Same as Test No. 6	Same as Test No. 6

These results indicate that exposure to ultraviolet radiation in the various types of containers employed has no deleterious influence upon the mydriatic action of solution of homatropine hydrobromide.

CONCLUSIONS.

(1) Certain physical measurements of solution of homatropine hydrobromide have been made.

(2) Sterilization or exposure to ultraviolet radiation has no apparent deleterious effect upon the mydriatic action of homatropine hydrobromide in either distilled water in sodium chloride solution isotonic with the tear.

(3) Homatropine hydrobromide in distilled water or isotonic solution preserved in ampuls shows no apparent loss in mydriatic action during a period of nine months.

RESEARCH LABORATORIES,
SHARP & DOHME.

MERCURIC IODIDE DETERMINATION IN TABLETS.*

BY H. O. MORAW.

Mercuric iodide as a medicinal agent is available in the U. S. P. form, in tablet triturates of one-eighth or one-fourth grain, in potassium iodide oil suspension in ampuls and in ointments. From the standpoint of pharmaceutical manufacturing as well as the Government regulatory work, tablets and ampuls are probably the more important forms of dispensing this drug. Since, in the case of tablets the usual builders, disintegrators and lubricants, such as sugar, starch and talc, might interfere in the electrolytic determination which is specified for the assay of the U. S. P. product, it is necessary to adapt a method to the assay in the presence of interfering substances. This has been done by Bender[1] who effected solution of interfering substances other than talc by free chlorine treatment and subsequent estimation as mercuric sulphide. Morgan[2] has adapted this method to calomel tablets and suggests it for other mercurials. Since the electrolytic apparatus is not available in the average laboratory, consideration was given to the practicability of other methods employing the usual laboratory equipment. The time

* Work performed while employed in the U. S. Food & Drug Laboratory, 1625 Transportation Bldg., Chicago, Ill.

[1] *Ind. & Eng. Chem.*, 6, No. 9 (1914), 753.

[2] *J. Assocn. Official Agr. Chem.*, 10 (1927), 367–9; cf. Spencer, *C. A.*, 20, 3210.

required by the sulphide method as well as the toxity of hydrogen sulfide gas, are other reasons for using other methods if available. Sandilands'[1] method based on dissolving the mercuric iodide in sodium thiosulphate and completing the estimation either as mercury sulphide or after reduction with zinc, applying the Volhard method to the estimation of the iodine, has not been applied to tablets but should be considered as an alternative method if its adaptation can be effected.

The method reported herein is sound in principle, sufficiently accurate for routine regulatory work, and rapid. Common laboratory apparatus and reagents are required.

EFFECTING COMPLETE REDUCTION OF MERCURIC IODIDE.

The chief difficulty in assaying mercuric iodide arises from its insolubility in suitable solvents. It is slightly soluble in fixed alkalies, undergoing partial decomposition with the formation of a soluble iodide and mercury and a complex containing HgI.3HgO and HgO. When treated with both a fixed alkali and reducing agent, such as lactose or formaldehyde, there is formed metallic mercury in addition to the above.[2] This incomplete reduction was found by the author to be due to occlusion and incomplete peptization. A coating of mercuric oxide formed around the occluded particles.

This suggested mixing the lactose intimately with the mercuric iodide, then treating the mixture with just sufficient of the alkali solution to make a smooth paste by stirring with a rod. The remainder of the alkali is then added. Thus by proper manipulation, complete reduction was found to take place and a soluble iodide obtained which could be separated from insoluble material and converted to silver iodide.

Results are given in Table I on pure mercuric iodide by this procedure alone and on tablet triturates by this procedure in comparison with the mercuric sulphide method.

TABLE I.—RESULTS ON MERCURIC IODIDE AND ON TABLETS OF UNKNOWN COMPOSITION.

Pure mercuric iodide.		Tablet triturates.				
Grams.	Per cent.	Manufacturer.	No. of tablets used.	Grainage.	Per cent of declared HgI_2 found.	Method used.
0.2	99.7	A	18.39	1/8	85.2	AgI
		A	18.39	1/8	87.1	AgI
0.2	99.4	A	24.525	1/8	87.8	AgI
		A	24.525	1/8	86.9	AgI
0.2	100.6	B	24	1/8	90.99	AgI
		B	20	1/8	90.0	HgS
0.3	100.1	C	10	1/4	94.07	AgI
		C	10	1/4	94.8	AgI
		C	20	1/4	97.10	HgS

Determination.

Transfer to a 250-cc. beaker an accurately weighed quantity of the finely powdered sample equivalent to 0.25 to 0.4 Gm. of mercuric iodide. Add about 0.2 Gm. of lactose, mix well with a glass rod. Make a smooth paste of this mixture by treating it with 2 to 5 cc. of 10% sodium hydroxide solution. Add an additional quantity of the sodium hydroxide solution, suffi-

[1] "Note on Preliminary Estimation of HgI_2," by James Sandilands, *C. A.*, 21, 1076; *Pharm. J.*, 116, 357–8, 368.

[2] National Standard Dispensatory.

cient to make a total of 30 cc. Dilute with water to about 75 cc. Digest gently over a low flame for 30 to 50 minutes. Filter the hot solution into a 400-cc. beaker. Wash the filter free from iodides. Add a slight excess of silver nitrate solution (5 cc. of 10%) and stir. Add 25 cc. of concentrated nitric acid, stir, cover the beaker with a watch glass and boil gently till the liquid becomes clear. Filter on a tared gooch crucible, wash with water. If chlorides are present wash with ammonia water. Dry at 120° to 130° C. and weigh. Silver iodide × 0.9677 equals mercuric iodide.

CONCLUSIONS.

1. The incomplete reduction of mercuric iodide in alkaline solution with lactose as a reducing agent is due to incomplete peptization and occlusion.

2. Thorough mixing of the lactose in a dry condition together with proper manipulation in moistening it with the alkali solution prepares the mercury compound for complete reduction.

3. The iodine is completely changed to a soluble iodide which can be separated and determined as silver iodide.

4. A method is submitted, the procedure of which is simple and rapid, and the principles are sound. Apparatus common to every laboratory may be used.

5. The limits of accuracy are within one per cent which is satisfactory for control and regulatory purposes.

(It is a pleasure to acknowledge the suggestions and encouragement of Mr. C. K. Glycart, U. S. Food and Drug Laboratory, Chicago, Illinois.)

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THE TOXICITY OF THALLIUM SULPHATE.*

BY JAMES C. MUNCH.[1]

The introduction in 1920 of proprietary rat poisons containing thallium compounds as the toxic ingredients directed attention to the toxicity of these products. The literature upon thallium is meager, so this investigation was undertaken to obtain definite knowledge of the toxicity of thallium compounds.

Thallium occurs in various ores which usually also contain sulphur. The chemical symbol is Tl; the atomic weight is 204.0. It forms two series of white, water-soluble salts: thallous, in which the metal is monovalent; and thallic, in which it is trivalent. The monovalent compounds are considered to be more stable and are used in pharmaceutical practice. The acetate (CH_3COO-Tl) has been used as a depilatory, and to check the night sweats in phthisis: the sulphate, Tl_2SO_4, is most commonly employed in the preparation of rat poisons.

Thallium was discovered by Crookes in 1863 by the characteristic green line in the spectrum (19, 20). Olmer and Tian (40) claim that the limit of detection with a spectroscope is 1:500,000,000 (2 micrograms per liter). It may be determined quantitatively by fusion with sodium carbonate, acidification with hydrochloric acid, adding an excess of potassium chlorate and boiling to remove excess

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* Scientific Section, A. PH. A., Portland meeting, 1928.

[1] Pharmacologist, Division of Economic Investigations, Bureau of Biological Survey, United States Department of Agriculture, Washington, D. C. Feeding tests were conducted in the Pharmacology Laboratory, F. D. I. Administration, U. S. Department of Agriculture.

chlorine, addition of sodium thiosulphate and potassium iodide, and titration of the excess sodium thiosulphate with iodine solution.

TOXICITY TO BACTERIA.

Thallium has a strong oligodynamic action on *B. Coli*, typhoid, dysentery, streptococci and staphylococci, but not on molds (6). When a piece of metallic thallium is placed in the center of an agar plate containing viable organisms, a clear zone of dead bacteria is produced over a zone 7 to 14 millimeters in diameter. This action disappears when air is removed, but returns on reëxposure, suggesting that air oxidizes Tl to Tl_2O, which dissolves to form TlOH (14). Concentrations of thallium acetate or carbonate as strong as 1:1000 (1000 milligrams per liter) are required to inhibit the growth of *B. Coli*.

TOXICITY TO ANIMALS.

Lamy (34) offered milk containing 5 grams of thallium sulphate to two young puppies. They drank only a small quantity, refusing the remainder, and died in 4 days in spite of all efforts to save them. Six ducks, two hens and a dog consumed a portion of the remaining solution. During the day the dog became restless, salivated and refused food; that night constipation and respiratory distress developed. The hind legs of the dog and the legs of the ducks and hens became paralyzed. All animals were dead or moribund 64 hours after consuming the poisoned milk. Ten milligrams of thallium sulphate killed another dog in 40 hours with the same symptoms. One gram of thallium sulphate killed a dog in 5 days, whereas 1.5 grams of lead acetate failed to kill (29), which led to the conclusion (41) that thallium was more toxic than lead. Doses up to 350 milligrams of thallium sulphate intravenously to rabbits interferred markedly with pulmonary circulation; 750 milligrams killed (1).

The flesh of a hen poisoned with thallium was fed to eleven rats, all of which died (Kobert, 33). Direct application of a thallium paste killed rats in 2 to 4 days (45). A mother rat was fed large doses of thallium for 4 days when it died. The nursing young were at once transferred to a normal lactating rat and given her milk, but all showed the typical effects of thallium poisoning (Ehrhardt, 28).

Swain and Bateman (46) reported that the lethal dose of thallium as thallous acetate when injected into the lymph sacs of 300-gram toads was approximately 16.7 milligrams per kilogram; death was due to respiratory failure. Immersed in a 1:2500 solution of thallium as thallous chloride (400 milligrams per liter), two toad fish and a rock cod died in 4 days; 800 milligrams per liter killed in 20 hours. Injected into the lymphatic trunk immediately posterior to the lateral fin, 10 to 20 milligrams per kilogram killed cod and blue fish in 1 to 4 days. Subcutaneous injections of 20 milligrams per rat, 15 milligrams per guinea-pig and 20 milligrams per rabbit caused death in 2 to 6 days. (Since the body weights of the test animals are not given, the doses per kilogram cannot be determined from the report.) Oral administration of 13 milligrams per kilogram and larger doses to dogs caused death in 7 to 15 days; 45 milligrams per kilogram killed in 4 days. The administration of 200 milligrams over a period of 13 days produced the same effect upon a dog as did the same quantity over 4 days to another dog. Swain and Bateman conclude that there is no tolerance for thallium but a cumulation of action, and

that thallium is more toxic than lead, being about as potent as "arsenic" (arsenious oxide). The first symptoms of thallium intoxication were lack of coördination of the hind legs of quadrupeds. Trembling, emesis, congestion of the entire gastrointestinal tract, constipation or diarrhea, albuminuria and finally, diffuse alopecia were noted. A blue line appeared upon the margins of the gums. Kidney lesions were observed in dogs receiving 200 milligrams (17 milligrams per kilogram).

In a very thorough series of studies by Buschke and co-workers (4 through 17), thallium poisoning of rats and warm-blooded animals was connected with its action upon the various endocrine glands, especially the ovaries or testicles, thyroid and suprarenals. Disturbances in calcium metabolism produced rickets; the addition of calcium to perfusion solutions counteracted thallium poisoning of isolated frog hearts. Dal Collo (21, 22) obtained parenchymatous and vascular nephritis with characteristic epithelial lesions in rabbits. No relation or interdependence could be established between alopecia, hypertrophic processes, bone lesions and cataracts in the eyes of rats by Mamoli (36). Olivier (39) confirmed previous reports that small doses of thallium fed over a long period of time caused inflammatory proliferations of the mucosa of the oesophagus and cardiac end of the stomach.

When rats receive a single large dose of thallium acetate, or daily doses as small as 0.1 milligram for some time, alopecia is produced. Buschke and coworkers, and later Dixon (25) showed that this was due to its action on the autonomic nervous system, and that local applications of thallium salves did not cause loss of hair in the treated area. The hairs of the scalp and the chest under direct control of the sympathetic nervous system are loosened readily. The eyebrows, eyelashes, hairs of the snout and other hairs not under control of the autonomic nervous system are not affected. All animals with the possible exception of the guinea-pig are susceptible to thallium alopecia. The hair becomes less glossy, and is easily rubbed off after about the 7th day. Complete loss of hair usually occurs between the 14th and the 19th days. Growth of new hair starts about the 4th week, and is complete by the end of the second month. Interruption of growth of the hair was found to be due to failure of transition of the large polygonal cells to the stratified hair cells. Thallium was found to selectively increase the reactivity of the entire autonomic nervous system, just as strychnine increases the activity of the spinal cord. Thallium is eliminated in the urine; spectroscopically, it has been found in every tissue of the body.

TOXICITY TO MAN.

Lamy (34) developed general lassitude and pains in the lower limbs which he attributed to thallium vapors, although Crookes (19) stated that he was not affected by the fumes, nor by the ingestion of 65 to 130 milligrams of various thallium salts. The application of a thallium paste to the chest of a 27-year old man produced violent pains in the extremities, alopecia, persistent albuminuria, stomatitis and general depression; these symptoms continued for about a month. Twenty micrograms of thallium per liter were found in the spinal fluid 25 days after application of the paste (Olmer and Tian, 40).

Ten milligrams of thallium nitrate per kilogram taken by mouth by a 34-year old printer with suicidal intent caused the same symptoms; in addition, emesis and achlorhydria were marked. New hair returned in 8 weeks, but 11 weeks were

required for the return of the gastric acidity to normal (Buschke, Peiser and Klopstock, 16).

A 2.5-year old child ate an undetermined amount of a bait made by smearing thallium paste upon bread, which had been exposed as a rat poison. Rapid collapse and vomiting were followed by partial recovery, but the child died in 29 hours. Post-mortem examination showed nothing abnormal except marked irritation of the stomach and small intestines. Spectroscopically thallium was demonstrated in various tissues. A 4.5-year old child also ate some of the same bait, but apparently a smaller quantity, as it survived (Lührig, 35). Bullard (3), Brieger (2), and Redlich (43) also report instances of poisoning from thallium.

Kaps (32) summarizes the symptoms produced in fatal subacute thallium poisoning as: (1) a short period of excessive gastrointestinal pain, emesis, nausea, colic and diarrhea which soon changes to obstinate constipation; (2) disorders of the central and vegetative nervous systems, as conjunctivitis, blepharitis, alopecia totalis, acute suppurative dermatitis of the face, sensitiveness of the muscles and joints which is increased upon pressure, retrobulbar neuritis, amaurosis and a decline in psychic functions to complete dementia; (3) degeneration of the heart, liver and kidneys. The mechanism of thallium poisoning following subcutaneous injection must be sought in the action on the central and vegetative nervous systems, with secondary disturbances of the nervous regulation of the endocrine glands.

In a survey of industrial poisonings among thallium workers, Meyer (37) reports reduction in vision, cataract, nephritis, alopecia and endocrine disturbances of various sorts.

The control of night sweats of phthisis by thallium acetate was found efficacious by Combenale (18), Huchard (30) and Buschke (10). However, the development of alopecia after 270 milligrams (Dubreille, 27); (Jeanselme, 31) and of pains in the legs and in peripheral nerves after 100 milligrams (Vassaux, 47) directed attention to its dangers and it has been abandoned. In the treatment of alopecia areata and ringworm in children, thallium acetate has been successfully employed in doses of 8 milligrams per kilogram (38). Great care is necessary, as toxic reactions have been obtained with doses as small as 4 milligrams per kilogram by Davies (23, 24). Dowling (26) reports 78 toxic reactions in 90 children, and Peyri (42) had 19 reactions in 74 children, following doses of 8 milligrams per kilogram. The conclusion reached by Sollmann (44) in his discussion of thallium seems justified: "The therapeutic use has repeatedly caused severe poisoning and is scarcely justified."

FEEDING EXPERIMENTS: TOXICITY OF THALLIUM SULPHATE TO RATS.

A sample of C. P. thallium sulphate was powdered and thoroughly mixed with screened rat food normally fed to our laboratory animals. Concentrations of bait were prepared containing from 0.25 to 10 per cent of thallium; in most experiments, 0.5 per cent of thallium was used. All rats tested were held in the laboratory and fed control food for at least a week, in order to obtain some degree of uniformity in condition of the animals. The day before they were to be used, each rat was placed in an individual cage and offered water but no food. On the morning of the experiment, each rat was weighed, and a suitable quantity of bait offered in a glass sponge cup. So far as feasible, it was our effort to offer each animal one-half to one per cent of its body weight of bait, previous experiments with other

poisons having shown that this quantity of food is usually consumed within 10 to 30 minutes. Frequent inspections were made after feeding to determine the rapidity with which the rats started to eat, and the time required to completely consume the poisoned food. Any uneaten food was removed after several hours and weighed. The day following the feeding of the poisoned bait, all animals were offered normal food and drinking water. All rats dying within 5 days (occasionally a longer time was employed) which showed symptoms of thallium poisoning, were considered as fatalities from the quantity of thallium consumed.

The Minimum Lethal Dose (MLD) was considered to be that dose of thallium which caused the death of all, or practically all test animals within the specified time. Doses somewhat larger than the accepted MLD must kill all test animals; doses somewhat smaller (20 to 25 per cent) kill less than half of the test animals in general practice. The MLD is considered to be accurate within 10 to 20 per per cent, which is the usual range of variability of rats to rat poisons.

Thallium sulphate, having the formula Tl_2SO_4, contains 81 per cent of thallium, so that 1.24 grams of thallium sulphate were taken as the equivalent of 1.00 gram of thallium in the preparation of all lots of rat food. Seventy-two white rats, weighing between 103 and 197 grams, were fed specified doses of thallium sulphate between December 4 and December 17, 1924. The poisoned baits were consumed with the same eagerness as control food containing no thallium. In most instances all food was consumed within 15 to 30 minutes after exposure. The results obtained in this series of feeding experiments are reported in Table 1. The dose of 25 milligrams of thallium per kilogram killed 73 per cent of the rats tested. All larger doses, commencing with 35 milligrams per kilogram (an increase of 40 per cent in dosage), killed all rats. The next lower dose tried, 20 milligrams per kilogram (a decrease of 20 per cent in dosage), killed but one-third of the test animals. Accordingly, 25 milligrams per kilogram was selected as the minimum lethal dose. This value was confirmed in a further series of feeding experiments in May 1927, upon 15 white rats weighing between 125 and 175 grams, with the results reported in Table 2.

With a minimum lethal dose (MLD) of 25 milligrams per kilogram, thallium is as toxic as strychnine when fed to rats.

It may be noted that death usually occurred on the second or third day after feeding thallium baits, unless the quantity of poison taken was excessive. Ten times the MLD killed only 1 rat of 5 within 1 day; forty times the MLD killed only 4 of 5 rats in 1 day. Thallium is a certain, but not a rapid, rat poison.

FEEDING EXPERIMENTS: TOXICITY OF COMMERCIAL THALLIUM PREPARATIONS.

A commercially prepared sample of grain with a thallium coating was fed to 7 wild rats weighing between 78 and 355 grams. Six rats died on the third day, the other on the fourth day after feeding. The doses of grain consumed were equivalent to 3 to 7.5 grams of grain per kilogram. Doses equivalent to 2.5 to 27.25 grams of grain per kilogram were fed to 12 white rats weighing between 157 and 210 grams. One rat died on the second day, 10 on the third and the other on the fourth day after feeding. Since all animals died in each test, it is not possible to ascertain the MLD, except that it is probably in the neighborhood of 2.5 grams of grain per kilogram.

A commercial thallium paste distributed as a rat poison was incorporated with rat food and offered to 3 white rats weighing about 200 grams; it was not readily eaten, but all rats consumed enough poison to cause death on the third day. Smeared on the backs of 6 other white rats, 3 died on the fourth day and the other three on the fifth day after application. A series of 6 commercial samples of thallium products were tested which had been used by field agents of the Bureau of Biological Survey. One sample was taken readily by prairie dogs, one indifferently well and two were refused, when the samples were mixed with the same baits and tested at the same places and under essentially the same conditions. Thirty-six rats weighing between 145 and 355 grams were all killed by doses of 20 and 40 milligrams per kilogram. The MLD was not determined accurately but is practically the same as that of CP thallium sulphate. No appreciable differences in rate of consumption of the different baits could be detected.

TOXICITY TO RABBITS: INTRAVENOUS INJECTIONS.

To determine the toxicity to rabbits, aqueous solutions containing 0.5 or 1.0 per cent of thallium sulphate were injected into the marginal ear veins of Belgian hares weighing between 1530 and 2250 grams. Some injections were made in 1924, and others in 1927 to confirm the original findings. The results obtained in both series of injections are consolidated in Table 3. The MLD was found to be 25 milligrams per kilogram, the same figure as obtained in feeding experiments upon rats. Respiratory failure was the cause of death. Post-mortem examinations failed to show any unusual reactions except marked congestion of the kidneys, and hyperemia of the entire gastrointestinal tract.

CONCLUSIONS.

1. Thallium compounds are very toxic to animals. The Minimum Lethal Doses when fed to rats, or intravenously injected into rabbits, are 25 milligrams of thallium per kilogram body weight.

2. Although occasionally given to children in doses of 8 milligrams per kilogram, it has caused toxic reactions even in doses half that size.

3. Thallium affects the sympathetic nervous system, thereby causing alopecia, pains in the muscles and nerves of the legs, and disturbances of the endocrine glands, particularly the ovaries or testicles.

TABLE 1. THE TOXICITY OF THALLIUM AS SULPHATE TO WHITE RATS.

Feeding experiments in December 1924.

Dose of thallium. mg./Kg.	No. rats fed.	No. rats dying after... days. 1.	2.	3.	4.	5.	Total.	Per cent dying.
10	10	0	0	0	0	0	0	0
15	8	0	1	0	0	0	1	12
20	8	0	2	1	0	0	3	37
25	11	0	1	2	4	1	8	73
35	5	0	3	2	0	0	5	100
50	5	0	0	1	2	2	5	100
75	5	0	0	3	2	0	5	100
150	5	0	3	2	0	0	5	100
250	5	1	4	0	0	0	5	100
500	5	2	3	0	0	0	5	100
1000	5	4	1	0	0	0	5	100

4. Thallium is cumulative in action; tolerance does not develop in animals. Thallium is a certain, but not a rapid, poison for rats.

TABLE 2. THE TOXICITY OF THALLIUM AS SULPHATE TO WHITE RATS.

Feeding experiments in May 1927.

Dose of thallium. mg./Kg.	No. rats fed.	No. rats dying after... days. 1.	2.	3.	4.	5.	Total.	Per cent dying.
20	5	0	0	1	2	0	3	60
25	5	0	0	1	4	0	5	100
30	5	0	0	0	5	0	5	100

TABLE 3. THE TOXICITY OF THALLIUM AS SULPHATE TO RABBITS. INTRAVENOUS INJECTIONS.

Dose of thallium. mg./Kg.	Body weight of rabbit, Grams.	Result.
10	2250	Survived
25	1800	Died after 1 day
25	2035	Died after 2 days
25	2220	Died after 2 days
50	1700	Died after 1 day
75	1500	Died after 1 day
100	1530	Died after 1 day

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THE BOTANICAL ORIGIN OF AMERICAN PEPPERMINT—*MENTHA PIPERITA* L.*

BY F. J. BACON.**

The botanical origin of the peppermint plant and its relation to other species of the genus Mentha is an exceedingly complicated problem. As late as 1891 Flueckiger designated as peppermint plant a representative of the genus Mentha which has the capacity to a high degree to produce a menthol.[1]

Because of the extreme complexity of the synonymy of the mint plant from a botanical standpoint, an effort is being made to secure the original descriptions of the older authors on the subject of mints for comparison and further study.

Several species of mints, the botanical description of which were not recorded, were used during antiquity.[2] In the oldest German treatise on distillation *Liber de arte distillandi*[3] of the year 1500, the following mints are mentioned as being used in the preparation of distilled waters, *Mentha rubra*, *M. balsamica*, *M. sarracenia* and *M. crispa*, but no distinguishing characteristics are given. It is not known whether the kinds of mint used formerly agree with those now in use.[4]

The peppermint oils of commerce from different parts of the globe are derived from several species, varieties or forms of the genus Mentha. Thus the several oils differ greatly in their properties and composition.[5]

In the mints grown in America *M. viridis* L. always has a spicate inflorescence with sessile leaves. *Mentha aquatica* L. and *M. citrata* Ehrh. have capitate inflorescence with petioled leaves, differing from each other by the absence of hairs on the *M. citrata* Ehrh. A study of the wild and cultivated mints yielding the peppermint oil of commerce shows all gradations of form, from the capitate to the spicate inflorescence, or a combination of the two forms on the same plant; the terminal inflorescence capitate and the lateral inflorescence spicate.

The earliest description of peppermint was found in the work of John Ray, 1696, "Synopsis Methodica Stirpium Britannicarum," 234, in which it is described as Mentha spicis brevioribus et habitioribus, folius Menthae fuscae sapore fervido Piperis, giving a description of the plant which corresponds to our peppermint. In his Historia Plantarum in 1704, 284, Ray describes the plant and calls it *Mentha Palustris*, Peppermint. Specimens of the plant are found in the herbarium of the British Museum in London. They were collected in 1696 in Southern England and agree in botanical characteristics with our peppermint of to-day. Linnaeus lists the peppermint of Ray as *Mentha piperita* in his "Species Plantarum," 1st Edition, 1753, 576.

William Hudson 1798, Flora Anglica, 251, lists the peppermint of Ray as *Mentha piperita* L.

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* Plant Science Seminar, Boston, 1928.

** Todd Fellowship, Univ. Wis., Dept. Pharm., 1922.

[1] F. A. Flueckiger, "Pharmakognosie des Pflanzenreichs," 3rd Edition (1891), 723.

[2] Gildemeister and Hoffmann, "The Volatile Oils," transl. by E. Kremers, 2nd Edition, 1 (1922), 190.

[3] Brunschwig, "Liber de arte distillandi. De Simplicibus," 1500.

[4] Gildemeister and Hoffmann, "The Volatile Oils," transl. by E. Kremers, 2nd Edition, 1 (1913), 191.

[5] *Ibid.*, 3 (1922), 515.

The varying forms of *M. piperita* L. were first noted by William Sole, Mentha Britannica, 1798, 15, in which he describes two peppermint plants, *Mentha piperita officinalis* in the spicate group, and *Mentha piperita vulgaris* (*M. piperita* Huds.), in the capitate group.

Bentham 1832 Labiatarum Genera et Species, names *M. piperita* L. as synonymous with *M. piperita officinalis* Sole and *M. piperita vulgaris* Sole.

The name *Mentha piperita* Huds. seems to be the most generally used by the older authorities on mints. However, the name *Mentha piperita* L. is in general use and appears to be the same plant.

The hybrid nature of the plant was suggested by F. Schultz, 1852, *Jahresbericht der Pollishia*, 12, 27, in which he uses the combined words *Mentha viride-aquatica* for *Mentha piperita* L.

It appears that Schultz using the combined words *viride aquatica* recognized in peppermint characteristics common to the two species of mints, *Mentha aquatica* L. and *Mentha viridis* L.

John Briquet,[1] 1891, describes the hybrid peppermint as X *Mentha piperita* L. p. p., Huds. *M. aquatica* X *viridis* F. S. The leaves of this plant are always petioled. Inflorescence very variable, forming a spike or a head with all intermediate forms.

The following subspecies and their varieties are described: I. Subspecies *piperita* Briq. (*M. aquatica*) X (*viridis* and *aquatica*) X (*viridis-citrata* F. S.).

Var. 1.—*Officinalis* Sole.

Var. 2.—*Durandoana*.

Var. 3.—*Inarimensis* Braun.

Var. 4.—*Globosiceps*.

II. Subspecies *citrata* Briq. (= *M. aquatica* X *viridis*); = *M. citrata* Ehrh. = *M. odorata* Sole = *M. aquatica* var *citriodora* Meyer. = *M. aquatica* var. *glabrata* Benth.

In 1911 A. and E. G. Camus[2] reviewed the genus in the Bulletin of the Roure-Bertrand Fils and give detailed description of the hybrid plant X *Mentha piperita* Huds., and state that the hybrid origin appears to have been fixed in the cultivation and presents several varieties which are classed into the groups outlined by Briquet, with the variety officinalis Sole divided into two forms. *Mentha piperita* Huds. var. *officinalis* Sole form *Rubescens* Camus, and *Mentha piperita* Huds. var. *officinalis* Sole form *Pallescens* Camus. The form rubescens of Camus is known as the English Mint and the form pallescens is known as the English White Mint.

Most recent authors are in accord with the present hybrid origin of peppermint because of the varying types of plants yielding peppermint oil and the fact that the plant is sterile.

It is known that hybrid plants in general have characteristics between those of the parents but are not necessarily all alike, explaining the great variations in pubescence and types of inflorescens which are present in the forms of *Mentha piperita* L. In general hybrid plants are sterile. Individuals from the same cross may possess characters approaching either parent, thus accounting for the French

[1] Les Labiees des Alpes Maritimes, Part 1 (1891), 18.

[2] Bull. Roure-Bertrand Fils (1911), 3.

peppermint approaching the *M. viridis* L. parentage and the English peppermint approaching the *M. aquatica* L.. parentage.

The American cultivated mint for the distillation of the oil approaches the English type.

The hybrid nature of *M. piperita* L. has been determined by a comparison of morphological characteristics, and not by experimental hybridization. In order to establish the origin of the American peppermint plant it will be necessary to make experimental crosses of the parent plants and produce sufficient oil for phytochemical study.

OENANTHE SARMENTOSA.

BY F. J. GOODRICH AND E. V. LYNN.

The poisonous character of other members of the genus *Oenanthe* has elicited unestablished local statements that the Pacific variety, *sarmentosa*, shows this toxic property. Just how such rumors started and from where they emanated is unknown, but cattle raisers in Washington at least appear sure in their own minds that many fatalities among cattle are due to the plant. Cattle, grazing in the vicinity of the habitat of *Oenanthe sarmentosa*, have been observed eating the tops of the plant growing in and under water, and with no apparent ill effects. This has led to the supposition that a poisonous principle might be present only in the rhizome and roots. Its similarity to wild parsnip may in part account for this view, but the greater share is undoubtedly to be traced to reports regarding the toxic nature of some of the other *Oenanthe*.

Authentic investigations of *Oenanthe sarmentosa* seem to be almost entirely lacking. There are several printed statements to the effect that it is toxic, but no one seems to have taken the trouble to investigate the plant scientifically. As far as could be learned, there has also been no chemical examination of any kind on this particular species. This is rather remarkable because at least one other member of the genus has been quite thoroughly studied. An extensive search of the literature has shown that all of the work on *sarmentosa* has been strictly of a botanical nature, and this has not been of great amount.

It seemed of particular importance, therefore, to subject the plant to minute investigation. Because of its close relationship to other members of the same family and genus, it would appear of great interest to study its distinguishing characteristics. The chemical composition, too, might throw some light upon these and upon the reputed toxicity. With a view to ascertaining whether the plant is poisonous or not, it is also desirable to carry out experiments on animals, using freshly gathered materials and extracts prepared from them.

Another interesting problem in this connection is the question of submergence and its effect upon the botanical structure. It is found growing in, under and out of water. Since some members of this genus apparently are not capable of growing entirely immersed, the possible differences in morphology under such circumstances should undoubtedly be determined. This can only be accomplished by a careful study of the amphibious nature of the plant under different growing conditions.

We have attempted, therefore, (*a*) to study the effects of submergence, (*b*) to

determine some of the components and their properties, and (*c*) to settle the question of toxicity.

OTHER SPECIES.

Eight species of *Oenanthe* besides *sarmentosa* are known. Of these eight (*crocata, Phellandrium, fistulosa, filiformus, Lachenallii, tirefolia, Californicum, pimpenoides*), the first three are known to be of a toxic nature. It is apparently not known whether the other five are poisonous or not. Seven are native of either Europe or Asia, or both, and one of them is said to be found native in the United States.

Oenanthe crocata has been mentioned in the literature repeatedly and has been examined chemically a number of times (3, 7, 15, 19). The poisonous character resides chiefly in the rhizomes, which apparently can cause death more quickly than aconite. The principal symptom is similar to the convulsion of picrotoxin, with death finally resulting from general exhaustion and failure of the respiration. The toxic principle, which has been extracted and analyzed, was named oenanthetoxin and given the formula $C_{17}H_{22}O_5$ or $C_{33}H_{44}O_{10}$. Since it is a dark brown, unstable resin like cicutoxin from *Cicuta virosa*, the analysis may be considered as doubtful. The rhizomes also contain 0.1 per cent of volatile oil which has apparently never been examined carefully.

Two other species have been investigated, but only to a small extent. *Oenanthe fistulosa* is known to contain (2) a poisonous substance which is presumably analogous to oenanthetoxin, and which has been named oenanthine. *Oenanthe Phellandrium* is described (21) as bearing both submerged and aerial leaves, the former sometimes having what appears to be aborted stomates.

HABITAT AND DESCRIPTION.

As far as is known to the writers, *Oenanthe sarmentosa* is exclusively a native of the American Pacific coast and not found in any other section of the country. It is very common in Northern California, Western Washington and Oregon, somewhat less in British Columbia and in the Cascade Range, possibly to a limited extent east of the mountains.

The plant is commonly known as water celery or water fennel. Its natural habitat is in low, swampy areas, often flooded in winter and spring, and it is occasionally submerged throughout the growing season. As would be expected, it is usually found growing profusely along the banks of streams and ditches. In spite of the fact that plants are frequently found entirely under water, rapid growth generally extends some of the leaves above the surface.

Oenanthe sarmentosa is perennial, glabrous and mostly aquatic in nature, mature specimens being from two to five feet high. The leaves, the largest of which are at the base and twice branched, are ternate and two-pinnate. The leaflets, which are from 1 to $2^1/_2$ centimeters long, are ovate, accuminate, toothed and often lobed at the base. The stem is smooth, green and hollow, except at the nodes or joints where the leaves are attached. The hollow is formed by the breaking down of the pith, and very young stems may often be solid. The flower clusters are broad and flat and resemble those of many umbellacious plants. The white flowers are in umbels, which are many rayed, have involucres, and prominent calyx lobes. The fruit is globose, glabrous, four millimeters long and slightly flattened laterally. The ribs are obtuse, wide, corky and the lateral ones the largest. The stylopodium

is short and conical. There are two oil tubes on the commissure side of the fruit. The lower underground portion of the stem is thickened and fleshy with a series of cross partitions, which in case of older plants divides the interior into hollow chambers. Most of the rhizomes are composed of pith between these partitions, showing that the pith is not here broken down as in the stem. Attached to this thickly tuberous rhizome are numerous roots and root-hairs. Many of the plants have but very little rhizome and the smaller roots constitute the largest part of the underground system. The roots are often several inches in length (22).

GROWTH UNDER WATER.

Many amphibious plants have quite a different anatomical structure, depending upon whether they grow under or out of water. It was, therefore, desirable to study the effects of submergence at different depths and periods and under varying conditions. Investigations were made by growing this species at different levels in water, by excluding varying amounts of light from plants growing under water, by observing the character of new leaves as they developed under the surface, and by comparing the structure of these new leaves with such as had grown out of water. Attention was centered particularly on the structural alterations in the leaves developed under these varying conditions, without any attempt to follow the complete morphological changes.

The number of stomates and size of leaves were found to differ under these two conditions. The rhizomes of healthy, vigorously growing plants, previously freed from leaves, were transferred to an artificial pond whose water-level was raised or lowered, so that at all times it was approximately three inches above the top leaves. In order to obviate influences due to previous removal of old growth, control plants were treated in a similar manner, but not submerged. The leaves growing under water were found to be uniformly wider and to possess a smaller number of stomates, the ratio being about 8:3. In almost every case, however, no matter what the amount of submergence or other conditions of the leaf, the presence of stomates was generally noted.

The comparative growth of seedlings showed a similar condition. During a three-month period from February to May, the plants attained a maximum height of four inches, from June to August one of fifteen inches. In every case those specimens grown nearest to the surface exhibited the most rapid development. Plants retained at a depth of six inches showed distinct progress during March and April and still more pronounced growth during the mid-summer months.

Progress was even evident for plants submerged nine and twelve inches under water, and here again this was greater during the summer period. Below eighteen inches in depth there appeared to be practically no development in either season and disintegration of the plant soon followed.

As expected, the amount of light available to the submerged plant was found to have an important influence upon the growth. The quantity was varied by regulating the size of openings in a metal covering over the pond. Experiments were conducted during the early spring and mid-summer months on plants just under the surface. With the maximum exclusion of light, no apparent development occurred, all parts turned yellow and eventually the leaves dropped. By careful experimentation, it was found that at least 15–20 per cent of the maximum light was

necessary for the plant to retain its green color during the growing season. The number and character of the stomates was not appreciably altered by the decrease in the amount of light, provided the green color was retained, but the rate of growth was distinctly diminished.

Exclusion of air from the leaf was also found fatal to the plant. All of the leaves of several individual plants were covered with a thin layer of petrolatum. Within a short time it was noted that development had ceased, the leaves turned yellow and eventually dropped. When the petrolatum was placed on a single leaf, the latter only was affected without influence on other leaves of the plant. It is, therefore, evident that sarmentosa leaves are adapted to carry on metabolic processes in air and under water, and that water itself does not inhibit them, but that closing the stomates by a foreign material is fatal.

HISTOLOGICAL.

As far as could be learned, no histological study has hitherto been made of *Oenanthe sarmentosa*. The microscopical examination of cross-sections from different parts of the plant showed that the structure corresponds to the usual one of a dicotyledon. The sections were made from plants grown above water in soil saturated with moisture, and collected in June 1926.

CHEMICAL EXAMINATION.

The plants were collected during 1925 and 1926 in various localities where conditions were at times quite different. Several hundred pounds of material was obtained at a time when none of the plants showed any indication of flowering, the whole portion above ground being selected. Other collections were made in May, June and July 1925, at which period fully developed flowers and immature fruits were present; the whole plant, exclusive of rhizomes and roots, was again taken. In autumn of the same year mature fruits were gathered separately. At different times throughout the year rhizomes and roots were gathered at various points along the borders of Lake Washington. Each one of these lots was examined separately.

Loss on Drying.—The fresh samples were weighed and allowed to attain constant wieght in the air, the loss being determined. Other portions were dried in an oven at 105° C. The results follow:

	Month of collection.	Loss air-drying. I.	Loss air-drying. II.	Loss at 105° C. I.	Loss at 105° C. II.
Leaves and Stems	May	...	...	82.67	82.63
	June	79.15	79.36	...	...
Leaves (submerged)	February	...	...	88.08	87.79
	May	...	...	88.36	85.49
Rhizomes and Roots	February	...	...	79.84	77.33
	March	...	...	77.97	...
	August	75.20	...	81.10	...
	November	74.60	...	...	...
Fruit	September	71.55	...	...	...

Extraction.—A convenient quantity of the powdered stems and leaves, and a somewhat larger amount of powdered rhizomes and roots, were extracted separately and successively with various solvents in a Soxhlet apparatus. The

solvents were then removed by evaporation at 100° C. The following table gives the results in percentage based upon the dried samples.

	Stems and leaves.		Rhizomes and roots.	
	I.	II.	I.	II.
Petroleum ether	1.80	1.56	2.96	2.84
Ether	3.99	3.96	2.62	2.74
Chloroform	0.89	0.84	0.62	0.61
Alcohol	19.81	23.69	29.36	28.97

Alkaloids.—The dried and ground sample (50 Gm.) was exhausted with alcohol containing a small amount of tartaric acid, the alcohol was evaporated, and the residue was partially dissolved in diluted acid. The resulting liquid was subjected to the usual tests for an alkaloid, using Wagner's solution, Mayer's reagent, tannic acid and picric acid. The leaves and stems growing under water, the leaves and stems growing above water, the flowers, the mature fruits and the rhizomes and roots were each tested separately and in all cases found to give no precipitates.

Glucosides.—The dried and ground sample (100 Gm.) was exhausted with boiling water, precipitated with lead acetate solution in the usual way, and the filtrate freed from lead with hydrogen sulphide. The solution was then neutralized and concentrated to a small volume. In other experiments the sample was extracted with boiling alcohol, the solvent evaporated, the residue taken up with water and the above process repeated. None of the portions gave material amounts of separated material, except in the case of the rhizome and roots, which gave a slight crystalline deposit. The latter did not reduce Fehling's solution, but after hydrolysis with dilute acids there was a strong reduction, which would indicate glucosidal nature. The amount was too small to examine further.

Pectins.—The presence of pectins was suspected because, at several times during the examination of the rhizome and roots, gelatinization had occurred. This was confirmed and the amount determined as follows: About 15 Gm. of the dried and ground sample was completely extracted by percolation with hot water, and the resulting liquid evaporated to 25 cc. The crude pectin was precipitated by adding 225 cc. of alcohol and the whole was filtered. The precipitate was dissolved in hot water and the solution evaporated to 40 cc., a few drops of dilute hydrochloric acid being added to dissolve a slight amount of turbidity. To the cooled solution there was added sufficient sodium hydroxide solution to hydrolyze the pectin, and the volume was then made up to 50 cc. After standing for thirty minutes, 40 cc. of water and 10 cc. of dilute hydrochloric acid were added and the solution boiled for five minutes. The precipitated pectic acid was dissolved in alkali and reprecipitated with hydrochloric acid, filtered, washed free from acid, dried and weighed. The yield was 2.36 per cent of the dried rhizomes and roots.

The occurrence of pectins in this plant would seem to offer good commercial possibilities. There is an ever-growing demand in this country for concentrated pectins to be used by the manufacturer and housewife in the making of jellies, jams and other fruit preserves. The apples, used as raw materials, contain about one per cent, which can be obtained from cider residues. Other materials from the vegetable kingdom contain as much or more pectin, but in the majority of cases this is not of the gelatinizing type. Present experiments indicate that the pectins from *Oenanthe sarmentosa* are exceptionally suitable, and the writers are engaged upon further tests to confirm this.

Other Carbohydrates.—The total reducing sugars were extracted from 5 Gm. of the dried rhizomes and roots by digestion with boiling water and the resulting solution was mixed with an equal volume of alcohol and allowed to stand over night. After filtering and washing, the whole was treated with lead acetate solution and made up to volume. The reducing sugars, as determined in the filtrate by the Munson-Walker method, amounted to 3.14 per cent of the dried rhizomes and roots.

Gums or dextrins other than pectins are apparently present in quantity in the rhizomes and roots. This is indicated by the large amount of precipitate by means of alcohol from the aqueous extract. There was also a voluminous precipitate with lead acetate. Sucrose, too, is present in the same material, because during the alcohol extraction crystals, which had deposited on the sides of the cold vessel, were identified as this substance.

The amount of starch in the rhizomes and roots varies considerably according to the time of collection. Fresh material gathered in summer and early fall gave excellent tests with iodine, but other samples at various times gave negative or conflicting results. Quantitative measurements were never satisfactory unless carried out on identical samples, figures being obtained on various samples from 0.5 to 3.0 per cent. The physiological significance of the change in starch content from month to month would be interesting to trace.

Resins.—The resins were extracted with hot alcohol from 4 Kg. of the dried rhizomes and roots. The alcohol was removed by evaporation and the residue was distilled with steam to remove the volatile material. From the aqueous portion a small amount of tar-like material was separated by extraction with ether, this was not further examined. Selective extraction of the main body or resin (105 Gm.) gave the following results:

Petroleum ether	52.5 per cent	Greenish brown
Ether	26.5 per cent	Brown
Chloroform	10.4 per cent	Brown
Ethyl acetate	0.6 per cent	Black
Acetone	0.7 per cent	Black
Carbon tetrachloride	1.8 per cent	Black
Alcohol	2.9 per cent	Black

VOLATILE OILS.

All parts of the plant were found to contain essential oils and those from the leaves and stems, from the rhizomes and roots, and from the fruit were examined. These were prepared by distilling the material with steam, after a preliminary maceration with water for twenty-four hours. The aqueous distillate was extracted with ether, the ether solution was dried, and the ether removed by evaporation in the usual way.

Oil from the Leaves and Stems.—This was of a light yellow color when first distilled, but it darkened perceptibly after standing a few days, the final color being reddish brown. The odor was distinctly aromatic and pleasing, resembling somewhat that of dill oil. From 1045 pounds of the fresh material, corresponding to about 216 pounds dried, there was obtained 41 cc. (37.7 Gm.), a yield of 0.038 per cent, calculated on the dry basis. The physical constants were as follows; specific gravity at 15.5° C., 0.9188; $[\alpha]_D$ at 20° C., + 7.78°; n_D at 20° C., 1.4918;

congealing point —12° C. Distillation of 20 cc. of the oil showed that it is principally composed of terpenes:

161–165°	1.0 cc.	170–175°	5.0 cc.	190–210°	1.0 cc.
165–170°	6.5 cc.	179–190	4.0 cc.	Residue	2.5 cc.

The third and fourth fractions were tested for phellandrene, with negative result.

Upon standing, the oil deposited small yellow crystals which were identified as almost pure sulphur, melting point 113° C. The deposition of sulphur would indicate the presence of some of its compounds in the oil. The total amount of sulphur in the oil was determined by heating with carbonate and nitrate and by subsequent conversion to barium sulphate. The result showed 1.28 per cent., corresponding to approximately 3 per cent of sulphur compounds calculated as diallyl sulphide.

Reference to the literature shows that very few volatile oils contain sulphur compounds. Most of these are obtained from the Liliaceae, the Cruciferae, or related families. Oil of peppermint was found by Power to contain dimethyl sulphide, and oil of asafetida is known to be principally composed of several compounds whose structure has not been determined. Volatile oils from other families may also contain the element sulphur, but the occurrence in the labiates (peppermint) and in the umbellates (asafetida) is distinctly exceptional.

Since the oil gave an aldehyde reaction, it was examined for furfural (12) which very often is associated with sulphides. The oil was dissolved in the proportion of 0.5 cc. to 50 cc. of aldehyde-free alcohol ad transferred to a colorimeter tube, kept at a temperature of 15° C. Colorless aniline (2 cc.) and 0.5 cc. of hydrochloric acid (specific gravity 1.125) were added and the whole mixed thoroughly. After thirty minutes, a distinct red color indicated the presence of furfural in quantity.

Oil from the Rhizomes and Roots.—This was of a light color when first distilled, but after standing a few days became brownish yellow. Its odor was much less pleasing than that from the stems and leaves. From 135 pounds of the fresh material, corresponding to 33.4 pounds dried, there was obtained 13.8 cc. (12.8 Gm.), a yield of 0.1 per cent on the dry basis. The physical constants were as follows: specific gravity at 15.5° C., 0.9304; $[\alpha]_D$ at 20° C., + 7.52°; n_D at 20° C., 1.4898. Distillation of 12.5 cc. of the oil indicated that it contains a fairly large percentage of oxygenated compounds:

171–175°	1.0 cc.	185–195	3.0 cc.	Residue	2.0 cc.
175–185	2.5 cc.	195–220	4.0 cc.		

The fractions boiling below 185° C. were tested for phellandrene by a method given below. A trace of crystalline solid was formed in the test, but the amount was so small that it was impossible to identify it as phellandrene nitrite. As with the oil from the leaves and stems, there was deposited upon standing a small amount of sulphur, and the quantity in the oil was found to be less than 0.1 per cent. This oil was also found to contain furfural.

Oil from the Fruit.—This was of a light yellow color, darkening upon a few days standing to a brownish yellow. The odor was distinctly aromatic, resembling eucalyptus oil somewhat, and quite as pleasing as that from the leaves and

stems. From 43.8 pounds of the fresh material, corresponding to 12.5 pounds dried, was obtained 21.7 cc. (19.7 Gm.), a yield of 0.35 per cent on the dried basis. The physical constants were as follows: specific gravity at 15.5° C., 0.9032; $[\alpha]_D$ + 7.52 at 20° C.; n_D at 20° C., 1.4942; congealing point —10.5° C. Distillation of 15 cc. of the oil indicated mostly terpenes:

161–170°	0.5 cc.	174–185	4.0 cc.	Residue	1.5 cc.
170–174°	8.0 cc.	185–200	1.0 cc.		

Upon standing the oil deposited sulphur, just as that from the other oils. Analysis of the whole oil showed that it contained 0.91 per cent, which corresponds to 2.1 per cent of sulphur compounds calculated as diallyl sulphide. Tests for furfural were entirely negative, which is very surprising.

The fraction boiling between 170° and 174° was found to contain a considerable quantity of the hydrocarbon, phellandrene, identified by conversion to the nitrite. A solution containing 5 Gm. of sodium nitrite in 8 cc. of water was layered beneath a petroleum ether solution of the fraction. Glacial acetic acid (5 cc.) was added with shaking to bring the evolved nitrous ether into intimate contact with the ethereal solution. At the same time the temperature was kept down by means of an ice-bath. The precipitate was filtered off, washed with water and then methyl alcohol, and recrystallized several times from chloroform. The melting point was found to be 103° C. Since α-phellandrene forms dextro and levo nitrites melting at 112–3° C. and 105° C., respectively, since the corresponding nitrites from β-phellandrene melt at 102° C. and 97–98° C., respectively, it is reasonable to conclude that the fruit oil of *Oenanthe sarmentosa* contains α-phellandrene.

TOXICOLOGICAL.

As has already been mentioned, there have been various unconfirmed rumors that *Oenanthe sarmentosa* is poisonous to animals. Regardless of the fact that no proven fatalities are on record, there is a distinct avoidance of it by cattle growers in the northwest. One of the chief reasons for this is the great similarity to wild parsnip, genus *Cicuta*. Because this question has never been investigated scientifically, experiments were here made to determine what grounds there are for this belief in toxicity.

Guinea-pigs and white rats were fed with the whole plant and with portions and extracts. They did not eat the leaves and stems nor the rhizomes with any great relish, but ingested enough to show absolutely that the material is not toxic. Various parts of the plant were then extracted separately with various solvents—petroleum ether, ether, chloroform, ethyl, acetate, acetone, carbon disulphide, alcohol and water—and, after removal of the solvent by evaporation, the extracts were forcibly fed to guinea-pigs and white rats. The doses employed varied from 0.2 Gm. to 0.5 Gm. In no case was there any sign of a convulsive effect or, indeed, of poisoning in any degree. On one or two occasions the animals lost some appetite and were not quite as active, but this was only temporary.

SUMMARY.

1. The leaves of *Oenanthe sarmentosa*, growing submerged, possess stomates and develop in inverse proportion to the distance from the surface; below 18 inches

there is no growth. At 2 to 3 inches the plant requires at least 15 per cent of maximum light. The plant does not survive when the leaves are covered with petrolatum.

2. Considerable quantities of pectin are found in the rhizome and this may be of commercial importance. Starch is present to a variable extent, reducing sugars to the amount of 3.14 per cent. Gums or dextrins and resins were found in large quantities, and sucrose also occurs to some extent.

3. Alkaloids were not found, but there may be small amounts of glucosides.

4. All parts of the plant contain volatile oils, the chief characteristic of which is the content of sulphur, that from the stem and leaf containing the most. α-Phelandrene is evidently a component of the fruit oil, while furfural is contained in that of the leaf and that of the rhizomes. The physical constants of each oil are given.

5. The loss on drying was determined for the fruit, the leaves and stems, and for the rhizomes and roots. Figures were also obtained for the amount of extracts by selective extraction.

6. Evidence is presented to show that there is no basis for the present widespread assumption that the plant is poisonous to animals.

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GERMICIDAL POWER OF ESSENTIAL OILS.

An investigation into the germicidal powers and capillary activities of certain essential oils. S. Rideal, E. K. Rideal and A. Sciver, —*Perfume & Essen. Oil Rec.*, 19 (1928), 285 Special No. Through *Squibb's Abstract Bulletin.* Twenty per cent soap emulsions of a number of essential oils were tested by the standard Rideal-Walker method; the strain of *B. Typhosus* used in previous investigations was also used here. Surveyal of the Rideal-Walker coefficients of some 26 pure samples of well-known essential oils indicates that quite a number of them give a coefficient many times greater than a number of commercial disinfectants on the market; some of them, such as palmarosa (9.0), cinnamon leaf (7.5) and cloves (8.0) may well be styled higher coefficient disinfectants. In a general sense it was noticed that these oils which proved to have a high germicidal power also formed a stable soap emulsion and *vice versa*. Although the authors have not decided the exact relationship between the chemical composition of the oils and their germicidal power, they suggest that in a few cases the germicidal power is roughly proportional to the percentage of one chemical substance in a chosen series of oils; *e. g.*, oil of cloves contains 90% of the phenol, eugenol, and has a coefficient of 8.0; cinnamon leaf contains about 85% of eugenol, and has a coefficient 7.5; and bay oil contains about 60% eugenol, and has a coefficient of 5.5. Essential oils when dissolved in pure B. P. paraffin lower the interfacial surface tension between the B. P. paraffin and water. From a relatively short series of tests it was evident that disinfectants may be evaluated, in a general way, by means of their surface tension lowering effect. Some oils—lime, white camphor, and eucalyptus—form quite stable peroxides of some of their constituents, similar to the well-known case of benzaldehyde. It was found that these peroxides possess considerable germicidal power, large enough to elevate the coefficient of the oil itself. Besides the oils already mentioned, the following were studied: Japanese mint, Boio de Rose, Coriander, Java Citronella, Lavender, Patchouli, Cassia, Lemon, Orange, Bay, Spearmint, Cajuput, Wormseed, Sassafras, Sweet Birch, Kananga, Juniper Berry, etc.—J. P.

"TRENCH MOUTH," OR VINCENT'S INFECTION.

PREPARED UNDER THE DIRECTION OF A SURGEON-GENERAL, BUREAU OF PUBLIC HEALTH SERVICE.

Vincent's infection, or "Trench Mouth," was first noticed about 1897, and has undoubtedly been more or less endemic since that time. It was not until the World War, however, that the disease took on epidemic form. In France, during that war, the condition, given the name of "trench mouth," at that time, was more common than were typhoid and malaria during the Spanish-American War. It was quickly recognized by the dentists with the troops; but, owing to the cramped living conditions in which the troops lived, it continued to spread. Many soldiers with infections of the mouth and pharynx were sick in hospitals and in quarters. Since the World War it has seemed to spread slowly through the States, or perhaps has been more promptly recognized.

Vincent's infection may present itself in the mouth or as Vincent's angina in the throat, or the two may be present together. It is believed to be due to the combined action of two varieties of the same germ. Inflammation and the formation of ulcerative areas of greater or less magnitude, located on the mucous membrane of the gums, cheeks, tongue and tonsils are characteristic of the disease.

The milder or more common form is slower in its progress and remains on the surface, not affecting the membrane deeply. Stagnant, foul mucous or serum seems to be necessary to its successful development. Undoubtedly the true type is more often found in unclean mouths where decayed teeth are present, around spaces where faulty fillings overhanging gum margins are a source of irritation as well as uncleanliness, or where the soft tissues of the mouth have already received injury from diseases such as pyorrhea, salivation or other diseases.

The infection is carried and spread from an infected individual to a well one by direct contact. Eating utensils not properly cleaned, face towels, drinking cups, personal articles, kissing and living in crowded buildings without plenty of fresh air and sunshine are some of the causes of the spread of this disease. The exact mode of transmission has not been entirely agreed upon by all authorities. An unsuspecting person may be a carrier and transmit the organism, harmless to himself but harmful to others.

To prevent the likelihood of infection with this disease everyone should keep his mouth in a clean, healthy condition. When teeth first begin to decay, they should receive immediate attention, and the small cavities should be filled without delay. No decayed teeth or broken-down roots should be allowed to remain in the mouth. The mouth should be thoroughly cleaned by the use of a toothbrush and dental paste or powder, or even soap or salt and water, after each meal, if possible; but in any case always before retiring for the night, and the first thing on arising in the morning. The gums should be properly massaged with the toothbrush or the fingers, and the roof of the mouth and the tongue should be softly brushed also. Although it might be possible for a clean mouth to become infected, the chances are greatly in favor of a person with such a mouth, for a clean mouth with healthy vigorous gums and mucous membrane will resist infection. The throat is extremely difficult to cleanse properly, but always before retiring a gargle of salt water or any mild antiseptic should be used.

The true diagnosis of Vincent's infection can be made only in a medical or dental laboratory with the use of the microscope. Whenever the uncomfortable symptoms of a persistent sore mouth are experienced, that person should immediately consult his dentist or his physician for treatment. Vincent's infection cannot be treated at home with household remedies. In the first place, it could not be properly diagnosed, and the danger of its becoming acute, with serious after-results, would be great.

In case a dentist or a physician is not available, the treatment should be the use of a mouth wash at frequent intervals until skilled treatment can be obtained. Undoubtedly the micro-organism causing this disease cannot live or keep its virulent nature in the presence of air or free oxygen. Although it might continue to exist for some time in the presence of oxygen, it will not multiply. It is evident, then, that any oxygen-liberating compound will check the growth of these organisms. For this purpose there are three outstanding drugs which may be used as an efficient mouth wash. They are hydrogen peroxide, potassium permanganate and sodium perborate.

Hydrogen peroxide is capable of liberating 10 volumes of oxygen. When used as a mouth wash, diluted with equal volumes of water and used at frequent intervals, forcibly working it back and forth in the mouth by contraction of the lips and cheek muscles, it will serve very well as a temporary measure.

Potassium permanganate in 1:5000 dilution is good, although it has a disagreeable taste. Sodium perborate is readily soluble in water, and when freshly dissolved liberates about nine per cent oxygen. It is a good home remedy. The solution should be freshly prepared; the perborate should be kept in a cool place; instructions should be given to purchaser. Any of these remedies will serve as a temporary expedient until the services of a dentist can be secured; but it is dangerous to delay treatment if it can be possibly obtained.

During the acute stage the toothbrush should not be used, as it is likely to cause a hemorrhage by forcibly removing the diseased membrane. This would furnish more pabulum for bacterial growth.

Although the outlook in Vincent's infection is favorable and the condition usually responds quickly to competent treatment, neglect may result seriously as the micro-organisms causing this disease have been isolated from other more serious diseases such as meningitis, peritonitis and diabetes. Most cases of Vincent's infection can be cured with proper treatment.

TIN-PLATED LEAD TUBES. THEIR USEFULNESS AS CONTAINERS FOR TOILET PRODUCTS.*

BY R. VAN WINKLE AND W. G. CHRISTIANSEN.

In Europe, particularly in France, tin-plated lead tubes have come into quite extensive use for the marketing of various creams. In view of the toxic effects produced by the assimilation of lead, it became of definite importance that the extent to which materials packaged in tin-coated lead tubes become contaminated with lead be known. For this study both American and imported tin-plated tubes

* Section on Practical Pharmacy and Dispensing, A. PH. A., Portland meeting, 1928.

were used and as examples of creams of interest Squibb Dental and Shaving Cream were selected because in this way non-soapy and soapy creams were being examined.

PERFECTION OF TIN COATING.

The tin layer on the inside of numerous lead tubes was examined with a high-powered magnifying lens. In none of our examinations were we able to find a perfectly uniform tin coating. Striations were always observed parallel to the sides of the tube. The bluish luster of lead could be observed along these striations in contrast with the silvery appearance of the tin. In the head of the tube near the orifice cracks in the tin surface were very apparent wherever a sharp bend occurred. From the above examination we were inclined to believe that the tin-plated lead tubes had exposed lead surfaces. To show this more markedly we subjected the tin-plated lead surface to the action of a solution of ammonium nitrate and ammonium sulfate. The latter solution has a solvent action upon lead but not upon tin. By adding potassium dichromate to this solution we obtained a yellow lead dichromate precipitate wherever the lead surface was not covered by tin. The latter tests confirmed our examination with the magnifying lens. In these examinations it might be stated that the foreign make tube showed itself superior to the American manufactured tube.

CORROSIVE ACTION ON TUBES.

It was found that 5% solutions of either dental or shaving cream produced some corrosion of the tin-plated lead tubes; p_H solutions ranging from 9–11 which includes both our dental and shaving cream showed no corrosive action indicating that the cause was not due to the p_H but to some constituent of the creams. Shaving cream showed a greater corrosive action on the tin-plated lead tubes than dental cream. Tubes containing the latter after eight months' storage only showed slight signs of corrosion. No change was observed in either the dental or shaving cream when packaged in tin-lined lead tubes under normal conditions of storage.

LEAD CONTENT OF CREAMS.

American Tubes.

Shaving Cream—Tin-Plated Lead Tube.			Dental Cream—Tin-Plated Lead Tube.		
Time of storage.	Temp. of storage.	% Pb in cream.	Time of storage.	Temp. of storage.	% Pb.
3 weeks	0° C.	0.015%	3 weeks	0° C.	0.007%
	20° C.	0.006%		20° C.	0.001%
	80° C.	0.016%		80° C.	0.008%
8 weeks	0° C.	0.010%	8 weeks	0° C.	0.001%
	20° C.	0.012%		20° C.	0.002%
	80° C.	0.039%		80° C.	0.003%
8 months	20° C.	0.025%	8 months	20° C.	0.006%
Plain Lead Tubes—Controls.			Plain Lead Tubes—Controls.		
3 weeks	0° C.	0.064%	3 weeks	0° C.	0.015%
	20° C.	0.035%		20° C.	0.003%
	80° C.	0.057%		80° C.	0.010%
8 weeks	0° C.	0.018%	8 weeks	0° C.	0.008%
	20° C.	0.035%		20° C.	0.010%
	80° C.	0.038%		80° C.	0.017%
8 months	20° C.	0.048%	8 months	0° C.	0.017%

Foreign Tubes—France—Krieg and Zivy.

Dental Cream—Tin-Plated Lead Tube.

Approximate tin coating.	Time of storage.	Temp. of storage.	% Pb.	Approximate tin coating.	Time of storage.	Temp. of storage.	% Pb.
6%	1 month	20° C.	0.0%	8.30%	2½ months	20° C.	0.0%
	2½ months	20° C.	0.002%		2½ months	80° C.	0.0012%
6.90%	2½ months	20° C.	0.0%	9.10%	2½ months	20° C.	0.0001%
	2½ months	80° C.	0.002%		2½ months	80° C.	0.0002%
7.60%	2½ months	20° C.	0.0008%	9.80%	2½ months	20° C.	0.0%
	2½ months	80° C.	0.0004%		2½ months	80° C.	0.0002%

Results of 0.0001–0.0002% in the above chart are within the experimental error and may be considered practically zero.

Shaving Cream—Tin-Plated Lead Tubes.

Approximate tin coating.	Time of storage.	Temp. of storage.	% Pb.
6%	1 month	20° C.	0.0%
	2½ months	20° C.	0.004%

Method of Analysis.—The method used varied slightly according to whether dental or shaving cream was being analyzed. The contents of an entire tube (50–90 Gm.) were taken for each analysis. The creams were decomposed by nitric acid, thereby putting the lead in solution as lead nitrate. From the latter solution which was thoroughly filtered and extracted with ether the lead was precipitated as the sulfide. The latter was removed from the solution, washed, dissolved and the resulting solution fumed with sulfuric acid. Upon dilution the lead precipitated as $PbSO_4$ which was filtered off and weighed.

In all of the above work our regular pure tin tubes were used as controls. In no case were we able to get a qualitative test for tin on creams stored in the same or in lead tubes which were tin plated.

From a comparison of our quantitative results the superiority of the foreign make tube over that manufactured in America is very apparent. This was indicated in our preliminary examination. Of the tubes manufactured by the firm of Krieg and Zivy those containing the maximum amount of tin as would be expected are the best. We are under the impression that this type of tube is being extensively used in Europe. Although the above data cannot be considered sufficiently extensive to definitely draw a conclusion, it is very indicative of the fact that tubes such as those containing 9% tin, as a coating, would be quite satisfactory from the standpoint of a container for dental or shaving creams.

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DIETHYL BARBITURIC ACID IMPORTS INTO THE UNITED STATES INCREASING.

Diethyl barbituric acid imports into the United States are increasing, there having been imported for consumption during the first seven months of 1928 an amount equal to that imported during the entire calendar year of 1927—15,000 pounds. Imports for consumption of diethyl barbituric acid and sodium salt in 1924 amounted to 1221 pounds valued at $2218 and the 1927 imports of "Diethyl barbituric acid and derivatives" amounted to 15,502 pounds valued at $132,084. An increase in the invoice price for "Veronal" is noted from $1 82, in 1924, to $8.50 in 1928.

DEPARTMENT OF BUSINESS MANAGEMENT

Conducted by Paul C. Olsen.*

COMMENTS, QUESTIONS AND SUGGESTIONS ARE INVITED AND WELCOME.

Readers are invited to submit comments, criticisms and suggestions regarding the material which appears in this department. The Editor also will undertake to answer questions regarding general problems of business management. Letters of general interest will be published, but the writer's name will not be revealed without his permission.

WHAT STANDARDIZATION IN DRUGGISTS' GLASSWARE HAS DONE FOR THE GLASS MANUFACTURERS.

Not so many years ago the business with druggists of almost any manufacturer of glassware was as much of a special order business as that of a merchant tailor. Each druggist had his own peculiarities and prejudices about the kind of prescription bottles and other glassware that he wanted. The effort always was to give each one of these individual retail druggists the exact requirements that he specified. At the time this seemed to be only good business.

Unfortunately, the individual whims and caprices of the various druggists seemed to change from time to time and therefore the special designs and molds which had been developed for them had to be pushed aside and something new and different created.

For a glass manufacturer who had been in business for any great period, this meant that, as the years went by, the number of styles, shapes and sizes of bottles and other druggists' glassware, which were made, increased tremendously and constantly.

Varied as the line became through the years, it still was impossible to satisfy all the special requests which druggists made. The result was that a line of private mold bottles was developed also, in which the druggist's own name was blown in the glass.

A further handicap was the fact that the retail drug store is essentially a small scale enterprise. The individual drug store is very definitely limited in the size to which it can grow. That of course is why a druggist, who would develop his retail business beyond this point, must open additional stores. The development of chain drug stores, as everyone knows, has not been, however, as rapid as the growth of chains in other retail lines.

The effect upon the manufacturers of druggists' glassware had been to make the individual orders received for bottles and other glassware extremely small—small orders and practically everyone special in some particular—did ever a manufacturing industry labor under a greater handicap?

At that time, however, the manufacture of bottles and glassware was itself a hand operation. As far as manufacturing was concerned, it wasn't much more

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trouble to have ten blowers, each working on a special order, than it was to have all ten of them working on one order.

That was only the beginning of the troubles, however. Aside from the fact that this procedure meant that the manufacturer had an investment in ten molds instead of one, there was also this difficulty—because of the nature of the retail drug business, manufacturers frequently received orders for special varieties of bottles in quantities so small that even with hand operations it was impractical to make the small number required. Accordingly, to satisfy customers, the companies made the smallest practicable quantity, filled their orders and put the rest of the run in stock. Maybe, later, the manufacturer sold these druggists the remainder—in which, of course, the profits of the entire run were locked up, and maybe he did not. Demand for various styles and shapes seemed to change with the seasons. Then, too, the drug stores in the old days seemed to have just as high a rate of mortality as they do to-day, so some of these remainders from special orders gave every promise of remaining in manufacturers' warehouses until the end of time.

It is easy to see what an enormous, varied and slow-moving stock these warehouses and distributing depots were bound to accumulate. Unhappily, with all the sizes and variety of their stock, the chances were very much against their being able to fill, from stock, any of the special orders constantly being received.

The revolution in the manufacture and distribution of bottles and other glassware came with the development and perfection of machine methods of manufacturing. The economies in production by machine were apparent at once. That, however, was only a partial solution of the problem. The real difficulty to-day is not how to make things, but rather how to sell them. To gain the production economies of the machine method of manufacture, it was necessary to standardize production. Instead of short runs of a wide variety of styles, shapes and sizes, the manufacturer would have to produce steadily large quantities of only a few kinds, if he was to manufacture by machine.

The advantages to the manufacturer of machine production were apparent, but how about the retail drug trade which always had been accustomed to buying bottles and glassware according to decidedly individualistic ideas? It was as if a man who had patronized a merchant tailor all of his life were suddenly asked to buy ready-made clothes.

With a purpose to learn in advance what their patrons' reaction would be, one company checked over the orders it had received over a period of years. To their surprise, it found that the great bulk of its business was in a relatively few styles, shapes and sizes. That is to say, although orders had been filled for every conceivable variety of druggists' glassware, a very large proportion of the demands could be filled with a relatively few standard numbers. With these facts as a basis the company went to its customers. Some objected most violently and told its salesmen in no uncertain terms that if the company didn't care to fill their orders in the way that they wanted them filled it need expect no more business from them. Others were more reasonable. The company held its ground. It knew that its business in these lines couldn't be profitable unless it was on a machine basis. Moreover, it knew from the facts on its books that the new standard numbers would satisfactorily take care of practically all customers' needs.

It also knew that the machine methods meant lowered production costs. Lower

production costs made possible lower selling prices. The crux of the situation was in getting sufficient orders for the standard numbers to make this possible.

The customer was perfectly willing to have his vanity gratified in special designs and markings as long as manufacturers of glassware were willing to do it for him at little or no extra cost. But, when he learned that, under the new order of things, such little foibles would make his glassware cost two or three times as much as the standard numbers made to do the same service would cost, he quickly lost his enthusiasm for special designs. Remember that these standard numbers were no haphazard choice. They were the result of the scientific selection of the numbers which, from the experience of years past, had proved most in demand. In effect, the druggists themselves had selected the numbers that the manufacturers should make for them by machine methods.

Under the old hand methods, manufacturers had to produce in small quantities as the orders were received. The druggists themselves, of course, had to wait, because there could be no advance manufacturing of their requirements. This meant wide seasonal variations in production, a disorganized employment situation in manufacturers' plants, and high production costs resulting from this seasonal manufacturing. Slow deliveries meant slower turnover for the manufacturers and for the retail druggists as well. Now manufacturers are able, in most instances, to fill any order for standard machine glassware from warehouses and distributing depots on the day it is received. The advantages to all concerned are apparent.

Seasonal variations in demand still remain, but with a standardized production it is now possible to manufacture the year round in anticipation of these demands. This means inevitably a better product at a lower price, a fact that customers appreciated sooner than was expected.

After all, glass bottles are used chiefly as containers. The quality or attractiveness of what is contained in them is not enhanced or depreciated in the slightest by unimportant and capricious variations in the design of the container. It is not like asking a group of men to wear suits of the same fabric and cut. Standardization simply has eliminated the unnecessary variations in a useful article with profit to the manufacturer, the retail druggist and the ultimate consumer.

THREE UNUSUAL PRESCRIPTION FORMULAS.*

BY RALPH E. TERRY.

During the last few weeks the following formulas have been submitted for consideration. All are relatively simple in explanation, yet are rather unusual in their combination.

I.

Tincture of Guaiac	℥ ss
Solution of Potassium Hydroxide	℥ ss
Alcohol	℥ ss
Cinnamon Water, to make	*f*℥ ij

Signa: One-half teaspoonful in a half-glass of water for a gargle.

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* Section on Practical Pharmacy and Dispensing, A. PH. A., 1928.

It is evidently the intention of the prescriber to use the potassium hydroxide to form water-soluble "soaps" of the resins present in the tincture. Then to further help matters, he included the alcohol. If the orthodox method of handling this mixture is employed, *i. e.*, mixing the alcohol with the tincture and then adding the solution of potassium hydroxide, a clear solution will result at this stage. Now as the cinnamon water is added, a sticky mass of resinous material is thrown out of solution and floats on the top of the mixture. Since the tincture has been diluted by the addition of the alcohol the potassium hydroxide has not been able to exert its saponifying action, so that on the addition of the water the alcoholic concentration is reduced to such a low point that the resins do not remain in solution.

If, on the other hand, the solution of potassium hydroxide and the tincture are mixed, then the cinnamon water added and, lastly, the alcohol, no difficulty is experienced.

The following formula is of a different type and seemingly of a very simple character.

II.

Sodium Bromide	℥ vij
Sodium Citrate	℥ vij
Peppermint Water to make	*f*℥ iij

Signa: One teaspoonful three times a day.

Since both the salts are water-soluble, no difficulty would be expected with such a formula. On actual compounding, however, it was found that the ordinary procedure of placing the salts into a bottle and filling up with water could not be followed. Nor could one salt be first dissolved in part of the water and the second salt added to this solution; in the latter procedure the second salt lumped rather badly and failed to go into solution within a reasonable length of time; this may be explained—since the first solution is nearly saturated, the second salt is not nearly as soluble in that solution as in water.

The ordinary technic under such conditions is, of course, to dissolve one salt in half the peppermint water, and the second in the other half, and then mix the two solutions; then no further difficulty is experienced.

Lesser amounts of the salts were found to cause no trouble, so the factor involved is the quantity of materials rather than a very complex reaction.

III.

Phenolphthalein	gr. xxiv
Magnesium Oxide	℥ iij
Liquid Petrolatum	
Acacia	
Water, aa q.s.	*f*℥ xij

Signa: dr. i 1 A.M. and P.M.

An emulsion of the liquid petrolatum was first prepared so as to contain 50% of the liquid petrolatum; then the light magnesium oxide and the phenolphthalein was added and the mixture triturated to a smooth paste. Considerable difficulty was experienced in making a homogeneous mixture, since the quantity of magnesium oxide is rather bulky. After standing, the reaction between the phenolphthalein and magnesium hydroxide resulted in the formation of a deep pink color.

Another change was noted in the preparation. When first made, it was of a "smooth" character but, after an hour or so, the mixture assumed the appearance of cottage cheese, becoming quite curdy. It is thought that this change is due to the magnesium oxide depriving the emulsion of water, with the production of magnesium hydroxide. The finished product is paste-like, much too thick to be dispensed in the usual way. It was suggested that the mixture be dispensed in an ointment jar, and the patient informed of the reason for doing so.

A more presentable mixture may be made by first hydrating the magnesium oxide, but a rather large increase in volume results, since an ounce of magnesium oxide requires about two ounces of water to produce a stiff paste; this means an increase in volume to at least sixteen ounces, or more. On standing, the mixture became solid, but not of the cheesy appearance of the first product. By further increasing the amount of water, a more presentable mixture may be obtained.

It is suggested that to dispense this mixture extemporaneously, milk of magnesia would overcome the difficulty of hydrating the magnesium oxide. This change will not permit of the administration of equivalent amounts of magnesium oxide, since approximately sixty-one ounces of the magma are necessary to replace the magnesium oxide. On the other hand, as an antacid the milk of magnesia would be as effective as the large amount of magnesium oxide, and the finished product is of a consistency better adapted to dispensing and administration. This last method of preparation resulted in a permanent product.

UNIVERSITY OF ILLINOIS, SCHOOL OF PHARMACY.

SOME SUGGESTIONS FOR SIMPLIFICATION OF SELTZER'S PROCEDURE IN PRESCRIPTION PRICING.*

BY LEONARD A. SELTZER.

"When the funny man in the daily newspaper runs short of subjects he can always fall back on the joke about druggists' prices."

This opening sentence in a leading editorial in a recent issue of the *Druggists Circular* reflects a state of public mind which has, unfortunately, altogether too much ground for justification. It is owing to the effect of the facts on which this conviction of the public rests—an effect not only on our cash receipts but on our moral reputation—our reputation for holding ourselves subject to principles of common honesty that we have given the question of prescription prices such careful study and have appeared before this section for three consecutive meetings with papers on this problem.

Last year we submitted what we have found to be a workable and helpful procedure—an algebraic formula for computing prescription prices. The three factors in this formula were: Compounding fee, service charge and selling price of material represented in the formula by the symbols C, S and M. Now, whatever difference of opinion there may be on the value of the first two factors or even whether or not they should be included at all, the cost of material is one, at least, that can hardly be ignored. If any attempt at correct prices is to be undertaken provision must be made for computing the charge necessary for material supplied, *tuto cito et jucunde.*

* Presented before Section on Commercial Interests, A. PH. A., Portland meeting, 1928.

It is with this in view that the accompanying tables have been made and are here presented.

They have been computed on a basis to yield a 40% profit on selling price. One table shows the selling price per ounce on preparations costing from $1.00 to

Table showing the value of material (including a profit of 40%) in *one* powder, capsule or pill ranging in grains from 1 to 10 and for material costing from $1.00 to $10.00 per ounce.

No. of grs. in capsule or powder.	1	2	3	4	5	6	7	8	9	10
Net price per oz.										
$1.00	1	1	1	2	2	3	3	4	4	4
2.00	1	2	2	3	4	5	6	6	7	8
2.50	1	2	3	4	5	6	7	8	9	10
3.00	1	2	3	5	6	7	9	10	10	12
4.00	2	3	5	6	8	10	11	12	14	16
5.00	2	4	6	8	10	12	14	16	18	20
6.00	3	5	7	10	12	14	16	18	21	24
7.00	3	6	9	11	14	16	19	21	24	28
8.00	4	6	10	12	16	18	21	24	28	32
9.00	4	7	10	14	18	21	24	28	32	36
10.00	4	8	12	16	20	24	28	32	36	40

Table showing the value of fluidextracts and other preparations listed at 40% advance in prices ranging from $1.00 to $13.00 per pint, in quarters of one oz. to 4 oz.

No. of ounces.	1	2	3	4
List price per pt.				
$1.00	7	13	21	25
2.00	13	25	37	50
3.00	19	38	57	75
4.00	25	50	75	100
5.00	30	60	90	125
7.00	46	90	135	175
13.00	81	163	245	325

Table showing the value in cents of one ounce (including a profit of 40%) on preparations ranging from $1.00 to $18.00 net per dozen in price, and from one ounce to 20 ounces in size.

No. of ozs. in original pkg.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	Unit price
$1.00	14	7	5	4	3	3	2	2	2	2	2	2	1	1	1	$ .14
2.00	28	14	10	7	6	5	4	4	3	3	3	3	2	2	2	.17
3.00	42	21	14	12	9	7	6	6	5	4	4	4	3	3	2	.25
4.00	56	28	20	14	12	10	8	7	6	6	5	5	4	4	3	.34
5.00	70	35	25	20	14	13	10	9	8	7	7	6	5	5	3	.42
6.00	84	42	28	21	17	14	12	11	10	9	8	7	6	6	5	.50
7.00	98	49	35	25	20	19	14	12	11	10	9	8	7	6	5	.60
8.00	112	56	40	28	23	19	16	14	13	12	10	10	8	7	6	.67
9.00	125	63	42	31	25	21	18	16	14	13	12	11	9	8	7	.75
10.00	140	70	50	35	28	24	20	18	16	14	13	12	10	9	7	.84
11.00	154	77	55	39	31	26	22	20	17	16	14	13	11	10	8	.92
12.00	168	84	60	42	34	28	24	21	19	17	15	14	12	11	8	1.00
14.00	196	98	70	49	40	33	28	25	22	20	18	16	14	12	10	1.17
16.00	224	112	80	56	45	38	32	28	25	23	20	18	16	14	12	1.34
18.00	250	125	84	63	50	42	36	32	28	25	23	21	18	16	14	1.50

Rule for computing the price of any number of ounces of any per cent at any price per ounce so as to yield 40% on material: Multiply the price in dollars per ave. ounce by the per cent by the number of ounces by two cents.

$18.00 net per dozen the original package ranging from one ounce to twenty ounces in size.

Another table shows the selling price of quantities ranging from one to ten grains of substance and ranging in price from $1.00 to $10.00 net per ounce.

A third table shows the selling price of quantities ranging from one to four ounces, listed at an advance of 40% and ranging in price from $1.00 to $13.00 per pint.

AN INTERESTING EMULSION.*

BY WILBUR L. SCOVILLE.

Some months ago there came to my attention an emulsion of cod-liver oil which differed in physical appearance from most pharmaceutical emulsions. It claimed to contain 40 per cent of cod-liver oil, and to be of particular advantage in preserving the vitamine content.

The emulsion was white, of smooth consistency, showed a slight separation of oil at the top (the bottle being filled into the neck, where about 2 cc. of clear oil showed) but no watery layer at the bottom, and was very limpid. In this last respect it resembled the viscosity of a thin cream more than the usual pharmaceutical emulsions.

It was slightly acid in reaction, diluted easily with water, and even when diluted with four or five volumes of water it did not separate a watery layer after standing several days. Alcohol in the proportion of 1 volume of emulsion to 5 volumes of alcohol only partially broke the emulsion, but the addition of hydrochloric acid broke it quickly. These reactions are the opposite of what one gets with the usual pharmaceutical emulsion.

An assay showed the presence of about 35 per cent (34.9%) of oil, and the aqueous portion did not respond to a test for gums, soaps, saponin or albuminous matter.

The emulsifying agent then became the object of curiosity, and in order to secure it in an unchanged condition, a portion of the emulsion was diluted with five times its volume of methyl alcohol and the oil extracted by repeated shakings with petroleum ether. The oil thus extracted showed the presence of considerable fatty acid, and was rather dark in color. The treatment it had received might account for this condition.

On evaporating the aqueous-alcoholic liquid, after extracting the oil, a creamy-white powder was obtained, which on ignition turned momentarily dark then became nearly white and appeared to suffer no change in character on ignition. About 0.5 Gm. of this powder was obtained, from 100 cc. of emulsion.

It was insoluble in hydrochloric acid of 10 per cent, 20 per cent or 37 per cent strengths (approximately) and was not soluble in warm solution of potassium hydroxide. After ignition with dry sodium carbonate, a considerable portion dissolved in water, indicating that it consisted largely of silica, or a silicate.

Emulsions were then made, using 40 cc. of cod-liver oil, 60 cc. of water and 0.5 Gm. of (*a*) kaolin, (*b*) silica gel and (*c*) Lloyd's reagent. Each made fairly good emulsions, but except that they were all very limpid they had little resemblance to the original emulsion. Each separated a watery layer at the bottom in a short time. The silica gel made the best emulsion, kaolin came next and Lloyd's reagent gave an indifferent product.

These experiments suggested that a finer silica might produce something nearer to that desired, and the following was tried.

Two and a half cc. of solution of sodium silicate was diluted to 60 cc. with water and 40 cc. of cod-liver oil added. On shaking, a smooth and thin emulsion

* Section on Practical Pharmacy and Dispensing A. PH. A., Portland meeting, 1928.

formed at once, which had a consistency and appearance similar to that of the pattern. But it soon separated a watery layer, and, furthermore, it was strongly alkaline.

Glacial acetic acid was now added cautiously, with shaking. No effect was apparent at once, but after a number of hours the separation of water was markedly less. In the course of about a week, 0.57 cc. of the acid had been added, and only a thin layer of water separated after standing over night. The emulsion now had a slightly acid reaction. More acid caused a separation of oil, and the emulsion also thickened.

Corresponding experiments were tried, using 2 cc. and 3 cc., respectively, of solution of sodium silicate per 100 cc. of emulsion. The lesser amount produced a thinner emulsion which separates into layers more readily, and the larger amount makes a slightly thicker emulsion which is not quite so smooth, but scarcely separates. In each case the reaction proceeds slowly, requiring a week or more for results—the acid being used in proportionate amounts.

These results suggested that a different neutralizing agent might improve the product; aluminum sulphate, also normal aluminum acetate, were tried.

Solutions were made of these salts and the solutions were added cautiously to sodium silicate emulsions. The emulsions changed slowly in each case, they gradually thickened and less of watery layer separated.

My curiosity being now satisfied, I have not attempted to perfect the emulsion, which appears to be too close to the danger line of stability to exploit.

The following formulas gave the best results, and samples are shown herewith.[1]

(1)	Cod-Liver Oil	40 cc.
	Solution of Sodium Silicate	2 cc.
	Aluminum Sulphate	0.9 Gm.
	Water, to make	100 cc.
(2)	Cod-Liver Oil	40 cc.
	Solution of Sodium Silicate	2.5 cc.
	Glacial Acetic Acid	0.57 cc.
	Water, to make	100 cc.
(3)	Cod-Liver Oil	40 cc.
	Solution of Sodium Silicate	3 cc.
	Aluminum Acetate	1 Gm.
	Water, to make	100 cc.

Of these three, the one made with aluminum sulphate seems to be the most stable.

In some of the experiments the emulsion broke after adding a fresh portion of the neutralizing agent, and considerable oil separated, but on further repeated shakings the emulsion sometimes formed again. This again indicates that the non-separable emulsion is only secured by a very cautious neutralization of the sodium silicate solution whereby a balance is obtained between the saponifying effect and the gelatinizing point of the silicate solution.

[1] Shown at Portland.

LABORATORY OF PARKE, DAVIS & CO.,
DETROIT, MICH.

THE DEPARTMENT OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY

H. M. Lerou, President, Norwich, Conn. J. W. Gayle, Treasurer, Frankfort, Ky. M. N. Ford, Chairman of Executive Committee, Columbus, Ohio. H. C. Christensen. Secretary, 130 N. Wells St., Chicago, Ill.

ACTIVE MEMBER STATES.

Alabama	Indiana	Montana	Rhode Island
Alaska	Iowa	Nebraska	South Carolina
Arizona	Kansas	Nevada	South Dakota
Arkansas	Kentucky	New Hampshire	Tennessee
Colorado	Louisiana	New Jersey	Texas
Connecticut	Maine	New Mexico	Utah
Delaware	Maryland	North Carolina	Vermont
D. of Columbia	Massachusetts	North Dakota	Virginia
Florida	Michigan	Ohio	Washington
Georgia	Minnesota	Oklahoma	West Virginia
Idaho	Mississippi	Oregon	Wisconsin
Illinois	Missouri	Pennsylvania	Wyoming

LEGISLATING FOR PHARMACY.

Legislatures will meet in some forty-odd states this winter, and it is hoped that the outcome will be a betterment in the pharmacy laws of a number of states.

Arizona is going after what it wants in the right spirit. The recent adverse decision by the Supreme Court of that state, ruling that patent medicines and other "household remedies" cannot be restricted for sale by drug stores in charge of registered pharmacists, has aroused the pharmacists of the state to action. At the convention of the Arizona Pharmaceutical Association held in Bisbee on October 17th and 18th, a very definite plan of campaign to secure drug store designation and ownership clause in the law was outlined.

It is fortunate indeed for Arizona that two such valiant warriors as Edward Dorsey and Arthur Hulett are available and willing to undertake the fight for better pharmacy legislation. Mr. Dorsey was elected president of the Arizona Pharmaceutical Association at the recent meeting. He took an active part in N. A. B. P. work in the period previous to 1920 when he was a member and secretary of the Kansas Board of Pharmacy. He is now in business in Phoenix, and his ability and experience will be an invaluable asset to Arizona in its fight.

Secretary Hulett, who was again reëlected at the convention, and who also serves as secretary of the Arizona Board of Pharmacy, has wasted no time in getting started with the campaign. A circular letter has already gone forward to each member, together with a list of the nominees for state senator and state representatives in each district. This printed list is checked and each member assigned to interview nominees in his immediate vicinity and obtain pledges that, if elected, the proposed amendment will be supported. The results of the interviews will be reported to the state association and that organization will support for candidacy and election only such nominees as have promised to aid pharmacy. This method is bound to bring results and other states are urged to organize their campaigns early, along similar lines.

Kansas, Colorado, Missouri, Arizona, Connecticut and Texas have already reported activity in legislative matters. The thirteen states without college prerequisite provisions in the law should get busy immediately so as to catch up with the thirty-five states which now have college provisions. It is time to advance the rear ranks and straighten the line before the four-year course goes into effect in 1932. H. C. C.

CULLED FROM MANY SOURCES.

A joint dinner and meeting of the board and college faculty members of Illinois was held at the Hotel Bismarck, Chicago, on October 20th—the beginning of the regular examination week for the Illinois Board of Pharmacy. These joint meetings were started over a year ago at the suggestion of the N. A. B. P. and have been tremendously successful in Illinois. Many matters of common interest are discussed; this time the particular subject was the curriculum for the four-year course.

The four-year course was unanimously approved to take effect at the time recommended by both the N. A. B. P. and the A. A. C. P.—the fall session of 1932. There was a wide divergence of opinion as to what should be included in the curriculum. It might be said, however, that it was generally agreed that the four-year course should include additions to the professional subjects as well as at least some instruction covering the fundamentals of business training. V. C. Michels, Superintendent of Registration for the Department of Registration and Education, presided. H. C. Christensen, N. A. B. P. secretary, and J. A. Hynes, former pharmaceutical educator and now retail pharmacist, were guests.

Another hobby discovered. This time it is the baby member of the Texas Board, C. B. Allison, who is guilty. When not busy with his duties as manager of the Dorsey Drug Co., he raises and markets pedigreed Boston Bull terriers. Mr. Allison is thirty-one years of age, and was appointed by Governor Dan Moody last year.

President Lerou has appointed the following to serve as the N. A. B. P. Legislative Committee for the coming year: *Chairman*, P. H. Costello, Cooperstown, N. Dak.; H. W. Reuter, St. Louis, Mo.; George W. Rhodes, Newark, Del. Other standing and special committees will be appointed in the near future.

Arthur G. Hulett was reëlected secretary of the Arizona State Pharmaceutical Association at the recent convention held in Bisbee. A rising vote of thanks was tendered him for his untiring work in keeping the fires burning for the six years since the organization was started, and he was elected official delegate to the 1929 AMERICAN PHARMACEUTICAL ASSOCIATION convention with expenses paid.

W. H. Whisenant, former member of the Texas Board of Pharmacy and now chairman of the Texas Legislative Committee, is making an appeal for concerted support of the new pharmacy bill to be introduced in the legislature by R. L. Reader this winter. Mr. Whisenant announces that he will continue working on this line "until our law is passed or until death do us part." That's the spirit!

Frederick C. A. Schaefer, of Brooklyn, was the guest of honor at a "friendship dinner and dance" at the Biltmore Hotel, New York, on October 28th. Mr. Schaefer is a recent appointee on the New York state board of pharmacy and the dinner was a celebration of the event.

The San Francisco convention of the N. A. R. D. adopted resolutions approving that the boards of pharmacy be kept as separate and distinct bodies instead of consolidating with other professions and trades and further resolved that the organization coöperate in assisting to reestablish separate boards in those states where consolidation has already taken place.

STATE BOARD NEWS.

Colorado.—The Governor has appointed J. E. Stauffer, of Rifle, Colorado, a member of the board of pharmacy to succeed Karl M. Frey, deceased. Mr. Stauffer's subject will be Materia Medica.

District of Columbia.—Reciprocal registration was granted to eleven applicants at the October meeting: Ralph I. Stebens, of Alabama; William L. Hancock, Robert H. Driskill, of Georgia; Burr Webber, of Iowa; William J. Fiddis, Jr., of Maryland; Michael A. Lisena, of New Jersey; Fred L. Powell, of North Carolina; George W. Thomas, of Pennsylvania; Primo Iacobucci, of Rhode Island; Max Halpern, of Vermont; and Ernest P. Kochert, of West Virginia.

Illinois.—The following applicants were accepted by reciprocity at a recent meeting and certificates of registration were issued as of October 1st: C. Edith Bennington, of Alaska; Philip T. Wiley, of Florida; Carleton E. Nicholson, J. O. Malsbury, of Indiana; Mrs. Opal B. Eaton, Elizabeth K. Newfeld, of Iowa; Curtis W. Smith, of Kansas; William M. Adair, of Louisiana; Dorothy L. Jackson, Joseph R. Harrell, of Michigan; Leo B. McDonough, George C. Lark, of Minnesota; William E. Simpson, William F. Walls, of Missouri; Morris L. Klar, of New Jersey; Leo Kramer, Arthur W. Brukoff, Albert A. Pierce, all of Pennsylvania.

Kentucky.—At the examination meeting held at Barbourville on October 10th, twenty candidates were examined for the registered pharmacist certificate, ten proving successful. Two out of three taking the examination for assistant pharmacist also passed.

The following qualified for registration by reciprocity: John E. Bradshaw, from Tennessee; Dave E. Permenter, from Mississippi; Edward A. Gaylor, from District of Columbia; Russell T. Spears, from West Virginia; Horace G. McCauley, from Ohio.

At the annual meeting of the board, which followed the examination, the following officers were reëlected: *President*, Albert E. Ely, Glasgow; *Secretary*, J. W. Gayle, Frankfort; *Treasurer*, Linwood A. Brown, Lexington; *Chairman Executive Committee*, George E. Porter, Berea.

The Governor has not appointed anyone to succeed Albert E. Ely, whose term expired recently.

The next examination will be held at Lexington on January 8, 1929.

Maryland.—At the examinations conducted at the University of Maryland by the board on October 3rd and 4th, thirty-one candidates for full registration and twenty-eight for assistant registration presented themselves. Results will be announced later.

The practical examination was varied somewhat this time by having each applicant for full registration write out a portion of the laboratory work prior to actually undertaking the practical exercise. The board is considering making this a fixed procedure in future examinations as the plan worked out very well in this instance.

Reciprocal registrations were recently granted as follows: William S. Harper, George L. Martin, both from West Virginia; Vincent J. Peraino, from Delaware; Bernard A. Pettit, from District of Columbia.

Michigan.—An examination meeting will be held at the Knights of Columbus Auditorium, 50 Ransom Avenue, N. E., Grand Rapids, November 20th, 21st and 22nd.

The next examination following will be held at the Detroit City College, corner Hancock and Cass, Detroit, on January 15, 16 and 17, 1929, according to announcement of G. M. Benedict, *Director*.

Reciprocal registration was recently granted to Alson E. Calkins, of Ohio and Wayman W. Williams, of North Carolina.

Missouri.—As a result of the September board examinations held at the St. Louis College of Pharmacy, the names of twenty-eight registered pharmacists and twenty assistant pharmacists have been added to the roster (report does not state total number taking examination).

Reciprocal registration was extended to the following during October: George L. Samuels, Jr., of the District of Columbia; James D. Steele, of Arkansas; and Ernest Hill, of Oklahoma.

New Jersey.—The Board of Pharmacy of the State of New Jersey announces that at a meeting held September 25, 1928, a resolution was passed making it mandatory for all applicants for registration as pharmacists in New Jersey who begin their college course any time after January 1, 1932 to have been graduated from a four-year course in pharmacy approved by this board.

This action is in line with the decision of the American Association of Colleges of Pharmacy to require its members to give a minimum pharmacy course of four years beginning with the sessions of 1932.

This decision is also in line with the action of the New Jersey Pharmaceutical Association which went on record in 1927 as favoring a four-year course in pharmacy. The action of the New Jersey Pharmaceutical Association favored the beginning of such a course in 1930, but the date

was deferred to 1932 in view of the action of the American Association of Colleges of Pharmacy.

The present rules of the Board of Pharmacy of the State of New Jersey require graduation from a three-year course in pharmacy, approved by the board for the registered pharmacist license and successful completion of one year of college work in a course approved by this board for the assistant pharmacist license. The present requirements for registered pharmacists will remain in effect for all applicants who begin their college work any time prior to January 1, 1932. The new requirements will apply to those who begin their courses after that date.

(Note: The N. A. B. P. adopted a resolution in 1927 at the St. Louis convention recommending that the four-year course be adopted for the school year beginning the fall of 1932.—H. C. C.)

Pennsylvania.—The constitutionality of the Pennsylvania ownership law was argued before the United States Supreme Court, on October 8th. The Louis K. Liggett Co. is the appellant. The decision of the court will probably be given in a short time and it is eagerly awaited by all those interested in the future welfare of pharmacy.

Texas.—On September 18th, 19th and 20th, the Texas Board of Pharmacy held its fall examination on the roof garden of the Adolphus Hotel in Dallas. One hundred and thirty applicants took the examination. The practical tests were held in the pharmacy laboratory of Baylor College of Pharmacy. Students were present from Texas, Oklahoma, Kansas, Tennessee, Arkansas, Louisiana and Illinois.

The next meeting will be held in San Antonio the third Tuesday in January 1929.

The following were registered by reciprocity during October: Alfred M. Guffey, of Arkansas; Charles F. Schwartz, of Indiana; Lester A. Sellers, J. Clarence Brooks and Harry Burnett, all of Louisiana; Ashley J. Castleberry, of Wyoming.

Wisconsin.—One hundred and two candidates were examined at the quarterly examination concluded on October 20th, of which number fifty-three were successful. Thirty were granted registered pharmacist licenses and twenty-three assistant licenses.

The next examination will be held at Madison, on January 21, 1929.

The following were accepted for reciprocal registration: Lester R. Forsyth and Leo M. Byrnes, both of Iowa; Nona A. Randerson and August E. Claus, both of Illinois.

"CUT RATE" CLINICAL LABORATORIES.

The New York City department of health is attempting to weed out many laboratories which operate in the city, the Health Commissioner says, on a factory basis and where work is done by persons who have insufficient training and experience. This type of clinical laboratory, it appears, has introduced the "rebate abuse," whereby, in order to get business the laboratories split fees with physicians and druggists. Their profit is small for the individual examination and a large volume of work, done quickly, is necessary for their existence. The City Commissioner of Health notes that this is only one of three types of clinical laboratories in New York, the others being those that are connected with hospitals or dispensaries, and those are conducted by physicians or other scientifically trained persons. It is the commercial laboratories with which the health department is now specially concerned, for they are said to have induced drug stores to display signs advertising that on payment of $1 or more a certain analysis will be made. Agents for the numerous cut rate laboratories make bids for trade by offering to make analyses for small sums. The result is that work which may be highly important to the health of individuals is done by persons not properly qualified. A recent amendment to the sanitary code provides, according to the *New York World*, that "no person shall display, or advertise, or hold out to the public that diagnostic laboratory facilities are furnished therein, unless the name and the location of the laboratory performing the tests and examinations are clearly indicated on such sign." Another provision of the sanitary code is that no person shall conduct a laboratory unless he has a permit from the Board of Health, has had three or more years of general laboratory training and has won one of the following degrees: M.D., A.B., B.S., Ph.D., Phar.D.

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

C. B. JORDAN—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS DEPARTMENT.

Teachers of practical dispensing will be interested in the following article by Professor Cox. The paper discusses a problem which is of great interest to all professors of pharmacy. Interest in it is becoming greater each year as our colleges of pharmacy make connection with student health services or hospitals and give their students practice in the dispensing of *bona fide* physicians' prescriptions.—C. B. JORDAN, *Editor*.

OUTSIDE PREPARATION FOR LABORATORY IN DISPENSING.

BY C. L. COX.

When Professor Nichols asked me to suggest a topic for discussion at this Seminar, I suggested the problem that has given me the most difficulty, "Outside Preparation for Laboratory in Dispensing," never thinking that I would be requested to lead the discussion.

At the school with which I have been connected, we have three semesters of dispensing, the second semester of the second year, and both semesters of the third year. Hereafter I will refer to them as first, second and third semesters of dispensing. In the first semester of dispensing the student is required to spend one or more laboratory periods, of three hours each, in compounding each of the classes of extemporaneous preparations as, infusions and decoctions, waters, pills, capsules, ointments, suppositories, etc., neatness, accuracy and technique being emphasized. In the second semester of dispensing the student is given prescriptions having incompatibilities. He is given careful instructions as to compounding them in the least objectionable way. In the third semester of dispensing, the student must depend upon his own knowledge in reading and compounding prescriptions.

Now what kind of a written report should we require of the student on work done in the laboratory? I have tried to make a "blanket" assignment, one that would cover all prescriptions. For example, I have required the student to calculate and itemize the cost of the ingredients that enter each prescription, using current drug magazines for drug quotations. This assignment gives the student a review of pharmaceutical arithmetic, changing from one system of weights and measures to another, specific gravity, formula cutting, etc. This also familiarizes the student with relative costs, and may encourage him to read current magazines. As soon as this assignment begins to become tiresome and the average student shows proficiency, I change the assignment. Another assignment is to require the student to calculate the dose of each ingredient of the prescription and compare it with the official dose. With this I sometimes ask for the medicinal action of each ingredient, and how the other ingredients of the prescription modify the action of the principal ingredient. Asking the student to report the order of mixing, during the first two semesters, is useless, for you are only requiring him to copy what he has read in his text. I sometimes ask the students of the second semester of dispensing to suggest to the prescriber, other drugs that could be used in the prescription that would have a similar action, but not the same incompatibilities; this reviews both the chemistry and pharmacology of the ingredients.

Students of the third semester of dispensing are required to copy the prescription on a regular-sized prescription blank and write the method of compounding, criticism, comment or changes on the back of the blank. This he hands in to the instructor with the finished prescription. No other report is required of the student. The student may be called upon in class to give the proper method of compounding, which is an incentive to him to review his work for this quiz.

While not under the head of "Outside Preparation for Laboratory in Dispensing," I would like to hear criticism also on my plan of assignment and grading the student in laboratory preparations. I assign more prescriptions than the average student can compound. All work must be done in the laboratory, and within the laboratory period. All preparations must be labeled, capped and wrapped. This encourages speed. If the package is not neat it is thrown aside without further inspection. The same applies to the cap and label if it is a bottle preparation. If these inspections are passed the preparation itself is inspected. No preparation is given credit if it does not pass all inspections. This places neatness and accuracy paramount to speed, for it avails a student nothing to hurry through five prescriptions and have only two accepted, when by exercising more care he could have finished three and had all pass. The grade of the student depends upon the number of "passed" prescriptions he submits during the semester.

THE INCIDENCE OF VARIOUS DISEASES AT DIFFERENT AGES.

Until recently the best index of the incidence or prevalence of most diseases has been the number of deaths, according to Surgeon-General H. S. Cumming of the U. S. Public Health Service. Since the fatality of different diseases varies greatly, death records cannot indicate very accurately the number of cases that actually occur. There has been a need for complete records of actual disease prevalence in the general population which has been long recognized by public health workers and students. While this need was being met to some extent by occasional records of sickness among school children and employed workers, the available information did not cover the entire life span nor did it include persons not at work or at school.

In an attempt to supply these needed data, the U. S. Public Health Service undertook a continuous survey of a general population group in Hagerstown, Maryland. Records were made of all of the illnesses which occurred among persons of different ages and of both sexes, and the cause was ascertained for each illness in so far as possible. The practicing physicians of that locality coöperated in ascertaining the cause of illness.

The results of this study in so far as they relate to the incidence of various diseases according to age have just been published by the U. S. Public Health Service, and constitute a volume of material which is more complete and detailed than that of any other study so far published in this country or abroad. The population group studied included about 8000 persons, and it was canvassed continuously by experienced field assistants for nearly two and a half years. Since this group was fairly representative of a typical small city in the middle eastern part of the United States, the statistics obtained afford a probably fair sample of the general population of this section.

The results of this study are given in numerous detailed tables and charts.

THE SECTIONS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

ABSTRACT OF THE MINUTES OF THE SESSIONS HELD IN PORTLAND, ME., AUGUST 20–25, 1928.

(See also summary report of the final sessions of the House of Delegates, printed in October JOURNAL.)

SCIENTIFIC SECTION.

The first session of the Scientific Section, A. PH. A., was convened at 8:00 P.M., August 22nd, by Chairman L. W. Rowe. First Vice-Chairman J. C. Munch presided during the reading of the Chairman's address.

THE CHAIRMAN'S ADDRESS.

BY L. W. ROWE.

In opening our deliberations in this fair New England City it is a pleasure to welcome all friends of scientific pharmacy to the meetings of our Section and to thank those members particularly who have made our program possible by the papers they are contributing.

Instead of the usual review of the year's scientific advances as related to pharmacy your Chairman takes this opportunity to discuss very briefly the relation of the pharmacologist to pharmaceutical advancement.

We are all familiar with that very important application of pharmacology to pharmacy, namely, the quantitative control of potency of certain powerful drugs by means of tests upon normal animals—bio-assays. This very practical use of pharmacology is now a part of our Pharmacopœia in that the U. S. P. X makes the bio-assay of six important types of drugs compulsory whereas it is only about thirty years ago that the first commercial application of such methods was made. Since that time many improvements have followed and many useful modifications have been suggested, but in spite of admitted imperfections, their use has been more than justified. Fortunately this type of control has not been carried to an extreme by including drugs which can be suitably controlled by chemical tests, but has been limited by most laboratories to the comparatively small number of types where chemical tests are either not available or are not true indices of therapeutic activity. Many opportunities for improvements in bio-assay methods still exist. It is, therefore, to be expected that forthcoming revisions of the U. S. P. will record great advances in this direction.

Another practical application of our science is the coöperative control work which can be done by the research pharmacologist where chemical tests are not suitable. There are many such problems. The most capable research chemist or pharmacist cannot always foretell how potent, physiologically, his synthetic chemicals or his pharmaceutical mixtures will be. He may be fortunate enough to predict the type of physiological activity which his research products will possess, since certain rough analogies between chemical structure and pharmacological action do exist. The quantitative degree of potency cannot be calculated by analogy but only by actual animal tests. As a case in point, and I trust you will pardon the somewhat personal reference, the recent separation of the pressor and oxytocic principles in posterior pituitary extract could not have been accomplished by the research chemist alone, for he had first to be told by animal tests that there was even a probability that more than one principle existed. His experiments then had to be controlled pharmacologically step by step to be certain that the proper progress was being made. The importance of the actual chemical research in this example is not at all to be minimized, but the value of the coördination of the different sciences to a common end is made apparent.

A third application is, of course, pure pharmacological research on new drugs where little if anything is known about their value. This can be carried out in such a way that therapeutic actions can be largely predicted and a cautious clinical trial conducted along the most promising lines, thereby saving the physician much experimentation by limiting the field of observation to well-defined indications. Such pharmacological investigations are of great value in often proving the falsity of claims made by natives of foreign countries for drugs unknown to the civilized world,

but they are also the means of verifying the powerful action of other little known drugs. As an example of this, one can point to the revival of interest in the alkaloid, ephedrine, following the work of Chen, although infusions of the drug had been used in China for many hundreds of years and its mydriatic action had been recognized many years prior to Chen's exploitation of its more important physiological actions.

In closing, your Chairman finds it unnecessary and inexpedient to make any recommendations to the Section at this time. He does want to call attention, however, to the loss suffered by scientific pharmacy and our Section in particular since our last meeting by the passing of such men as George M. Beringer, W. A. Hall, Caswell A. Mayo and Joseph L. Lemberger—three of them former Presidents of the AMERICAN PHARMACEUTICAL ASSOCIATION.

I wish to take this occasion to thank the other officers of the Section, particularly the Secretary who does most of the actual work, for their splendid coöperation. The personal honor which the members of this Section have conferred upon me will remain as a lasting and very bers pleasant memory.

First Vice-Chairman J. C. Munch appointed the following as members of the Committee on Chairman's Address: Francis O. Taylor, Frank R. Eldred and Glenn L. Jenkins.

Secretary Paul S. Pittenger reported on the activities of the Section; he stated that 58 papers had been received for inclusion in the program of the Section.

On motion of H. C. Wood, Jr., seconded by F. O. Taylor, it was voted to accept the report of the Secretary. The report of the Committee to coöperate with the National Conference on Pharmaceutical Research was read by Vice-Chairman J. C. Munch. Upon motion of F. O. Taylor, seconded by F. E. Bibbins, it was voted to accept the report.

Chairman L. W. Rowe appointed F. E. Bibbins, W. H. Zeigler and Mortimer Bye as members of the Committee on Nominations.

(*Abstracts of discussions of contributions will be printed when the papers are published, unless some action requires prior publication.*)

The following papers were read and discussed, presented in abstract, or read by title:

"The Racial Difference of the Mydriatic Action of Ephedrine, Cocaine and Euphthalimine," illustrated, by K. K. Chen. (Discussion.)

"Stability of Homatropine Hydrobromide," by Paul S. Pittenger and John C. Krantz, Jr. (No discussion.)

"Relative Sensitivity of Cats to Various Mydriatics and Miotics," by J. C. Munch and H. L. Bunn. (No discussion.)

"Mydriatic Potency of Ephedrine and Its Salts," by J. C. Munch. (Discussion.)

"Influence of Potential Alkalinity on the Utilization of Supplementary Calcium Lactate in Young Rachitic Rats," by Versa V. Cole, John H. Speer and Frederick W. Heyl. (Read by title.)

"Influence of Potential Alkalinity on the Utilization of the Supplementary Calcium Lactate in the Mature Rat," by Versa V. Cole, John H. Speer and Frederick W. Heyl. (Read by title.)

"Sodium and Potassium Balance When Used as Citrates in Acidote and Rachitic Conditions in Rats," by Versa V. Cole, John H. Speer and Frederick W. Heyl. (Read by title.)

"A Metabolic Cage for Dogs," illustrated, by A. R. Bliss, Jr. (No discussion.)

"The Toxicity of Thallium Sulphate," by J. C. Munch. (No discussion.)

"A Proposed Physiological Standard for Pituitarium," by Wm. T. McClosky and J. C. Munch. (Remarks by Paul S. Pittenger, no discussion.)

"Respiratory Tests for Determining the Rate of Oxygen Metabolism," by Albert Schneider. (Read by title.)

"The Rubber Band Skin Reaction," by Albert Schneider. (Read by title.)

"A Simple Spectroscopic Measure of Tissue Metabolism," by Albert Schneider. (Read by title.)

"A Source of Error in the U. S. P. Method of Vitamin-A Assay," by Robert L. Jones. (Read by title.)

"Analytical Aspects of Cod-Liver Oil," by Briod, Van Winkle, Jurist and Christianson. (No discussion.)

"Color Test for Vitamin A in Cod-Liver Oil," by Jones, Arzoomanian, Briod and Christianson. (Discussion.)

"Preliminary Studies of the Rosenheim Drummond Color Tests of Vitamin A in Cod-Liver Oil," by E. L. Towle and E. C. Merrill. (Read by title.)

"Medical Trees of the United States," by E. T. Stuhr. (Read by title.)

"Australian Sandalwood Oil," by Edward Swallow. (Read by title.)

"The Assay of Hydrastic Canadensis," by H. A. Langenhan and R. Hirose. (Discussion.)

A motion to adjourn was seconded and carried.

SECOND SESSION.

The second session of the Scientific Section was convened by Chairman Rowe at 9:30 A.M., August 23rd.

Reading of papers was proceeded with as follows:

"A Study of the Germicidal Efficiency of Silver Protein Mild and Silver Protein Strong, U. S. P., by K. F. Ehmann. (Read by title.)

"An Application of Statistical Methods to Data of the Phenol Coefficients," by Lloyd K. Riggs. (Discussion.)

"A Convenient Method for the Estimation of the Hydrogen-Ion Concentration of Certain Bacteriological Media," by Lloyd K. Riggs and Lyman D. Fonda. (Discussion.)

"Silver-Ion Concentration of Colloidal Silver Germicides, No. 3. Titration of Soluble Iodide in Colloidal Silver Iodide," by Smith and Christianson. (Discussion.)

"Effect of Changes of Hydrogen-Ion Concentration upon Inverted Emulsions," by John C. Krantz, Jr. and Neil E. Gordon. (No discussion.)

"Arabic Acid and Some of Its Salts as Emulsifying Agents," by John C. Krantz, Jr. and Neil E. Gordon. (No discussion.)

"The Buffer Capacity of Acacia and Tragacanth," by John C. Krantz, Jr. (No discussion.)

The second session of the Scientific Section was then adjourned. (Report of the Joint Session of the Scientific Section and the Section on Practical Pharmacy and Dispensing follows report of final session of the Scientific Section).

THIRD SESSION.

A third session of the Scientific Section was called to order at 2:30 P.M., August 24th.

Reading of papers was continued:

"Bio-Assay of Preparations of Ovarian Follicular Hormone," by E. P. Bugbee and A. E. Simond. (Read by title.)

"Production of Antirachitic Substances by the Irradiation Process," by E. Pickering. (Read by title.)

"A Simple and Efficient Method of Permanently Numbering Rabbits," by K. L. McAlpine. (Read by title.)

"The Chemistry of the Agrumans with Special Reference to That of Sweet Orange Peel," by M. B. Matlack and Edward Kremers. (Read by title.)

"The Action of Nitrosyl Chloride on Pentadecane," by P. A. Foote and Edward Kremers. (Read by title.)

"The Action of Nitrosyl Chloride on 2,2,4-Trimethyl Pentane," by P. A. Foote and Edward Kremers. (Read by title.)

"Syrup of Ferrous Iodide," by H. V. Arny, Benjamin Vener and Leslie Jayne. (Discussion.)

"A Time-Saving Method for Using the Doremus Urea Nitrogen Determination Apparatus," by Leah G. Goeckel. (No discussion.)

"A Simple Method to Determine the Total Volume of Urine Voided in Twenty-Four Hours from a Fractional Specimen," by Henry J. Goeckel. (No discussion.)

"Tests for Lactic Acid," by H. V. Arny and Marguerite Dimler. (Discussion.)

"The Color and Ash Requirement for Resin of Podophyllum," by L. D. Havenhill. (Read by title.)

"Generalities of Solution," by John Uri Lloyd. (Read by title.)

"The Oil from the Leaves of Pinus Strobus L," by J. H. Draize and Edward Kremers. (Read by title.)

"More Derivatives of *p*-Methoxy Cinnamic Acid," by C. W. Sondern and Edward Kremers. (Read by title.)

"Preliminary Study of the Seeds on Monarda Punctata," by A. A. Harwood and Edward Kremers. (Read by title.)

"A New Methane from Pittosporum Resiniferum," by S. Blanco and Edward Kremers. (Read by title.)

"Organic Addition Compounds of Calcium Chloride and Calcium Iodide," by Frederick R. Greenbaum. (Discussion.)

"A Chemical Study of Phytolacca Decandra," by Glenn L. Jenkins. (Read by title.)

"Note on the Chemical Combination between Morphine and Aspirin," by C. B. Jordan. (Read by title.)

"Analogs of Chinosol," by Van Winkle and Christiansen. (No discussion.)

"Stability of Solution Potassium Arsenite," by E. Pickering. (Read by title.)

"Stability of Anesthetic Ether," by F. W. Nitardy and Tapley. (Discussion.)

"Stability of U. S. P. X Syrup of Ferrous Iodide," by H. A. Becker and F. F. Berg. (Discussion.)

"Preparation of Colloidal Lead and the Determination of Lead Ions in Colloidal Lead," by Keelan, Smith and Christiansen. (Discussion.)

"The Estimation of Alkaloids in Admixture with Vegetable Drugs," by George E. Ewe. (Read by title.)

"An Accurate Method for Observing the Meniscus of Liquids Confined in Small Tubes," by J. T. Lloyd. (No discussion.)

"A Practical, Accurate and Inexpensive Apparatus for Hydrogen-Ion Determinations," by H. K. Mulford and F. R. Greenbaum. (Discussion.)

"Notes on Extraction and Preservation of Fluidextract of Cascara," by H. A. Becker and F. F. Berg. (Read by title.)

"Dermatological Use of Titanium Oxide," by B. L. Meredith and W. G. Christianson (Read by title.)

"Report on Availability of Certain New Biologicals," by J. C. Peacock. (Read by title.)

"Estimation of Fat in Malted Milks," by C. W. Ballard. (Read by title.)

"Seed of Euphorbia Marginata, Pursh.," by L. E. Harris. (Read by title.)

The Committee on Nominations reported the following nominees: *Chairman*, J. C. Munch, Baltimore, Md.; *First Vice-Chairman*, H. A. Langenhan, Seattle, Wash.; *Second Vice-Chairman*, W. G. Crockett, Richmond, Va.; *Secretary*, (the Secretary holds office for three years), L. W. Rowe, Detrolt, Mich.; *Delegate to the House of Delegates*, Paul S. Pittenger, Baltimore, Md.

Upon motion of F. F. Berg, seconded by F. W. Nitardy, it was voted that the Chairman of the Committee on Nominations cast a unanimous ballot for the nominees, and in due order the nominees were declared elected.

John C. Krantz, Jr. suggested that the Ebert prize medal be brought to the annual meeting, necessitating thereafter the engraving of the name of the recipient. A motion to that effect was made and seconded by F. O. Taylor, and adopted.

F. W. Nitardy stated that it would be helpful to have abstracts of all papers so that the members may study them and arrange their attendance at the Sections accordingly. He assumed that a reason for delay in preparing abstracts was due to belated contributions.

J. C. Munch explained that letters had been mailed out in January and February and request was made to send in papers and abstracts promptly. Later, the members were advised that the program would be printed about the middle of July. The program represents the papers received by that time, and since then additional papers have come in. If the papers had been sent in earlier it would have been possible to give more publicity to the work of the Section.

L. W. Rowe stated that it was evident that some of the papers come in too late for mimeographing abstracts of them.

Frederick R. Greenbaum said that the American Chemical Society requires that the authors of papers be present or represented.

F. F. Berg referred to the large number of papers presented to this Section.

J. C. Munch thought some authors were fearful that they would not have the opportunity to present their papers on account of insufficient time given to the Section.

Lyman F. Kebler referred to idle time from Saturday until Wednesday.

Chairman Rowe expressed thanks for the coöperation given him and was greatly pleased with the large number of valuable papers presented to the Section. He then installed the Chairman-Elect, J. C. Munch, who expressed his appreciation of the honor conferred.

F. E. Bibbins offered the thought that the report of the Committee on Nominations be made at an earlier session and also that of the Committee on the Chairman's Address.

The final session of the Scientific Section was then adjourned.

JOINT SESSION, SCIENTIFIC SECTION AND SECTION ON PRACTICAL PHARMACY AND DISPENSING.

The Joint Session of the Scientfic Section and the Section on Practical Pharmacy and Dispensing was called to order by Chairman Adley B. Nichols, of the Section on Practical Pharmacy and Dispensing, August 23rd, at 8:00 P.M. He stated that the Joint Session of the two Sections assembled was an annual feature. He introduced Dr. K. K. Chen, who presented the first paper of the program entitled: "Studies on Synthetic Ephedrine." A brief discussion followed.

Chairman E. Fullerton Cook presented a report on the United States Pharmacopœia, published in the Scientific Section of this issue of the JOURNAL.

Otto Raubenheimer inquired what progress the U. S. Pharmacopœia was making in China (the Chinese edition). Chairman Cook was not in position to report definitely, owing to conditions that had prevailed in China for several years.

Dr. Chen stated that information on the subject might be obtained from the *Shanghai Press*, Shanghai. As far as he knew the U. S. P. had not been legally adopted in China. He thought China would eventually establish its own Pharmacopœia, but he hoped that the U. S. P. would serve a useful purpose in the preparation of the Chinese standard. In Chairman Cook's opinion that would probably be the course; it would be inadvisable to accept of a translation, for in China many drugs and preparations had been employed for centuries and are still serving a useful purpose.

Chairman W. L. Scoville presented the report on the National Formulary.—It is printed in the September JOURNAL, pages 920–922.

A paper on "Notes on the Assay Methods of the U. S. Pharmacopœia, X" was read by T. F. Pappe.—See September JOURNAL pages 844–848.

The report of the Committee on Ebert Prize was made by Chairman John C. Krantz, Jr., naming Edward E. Swanson as the winner, for his contributions on "The Standardization and Stabilization of Aconite Preparations."—See formal presentation in the minutes of the General Sessions.

The last contribution to the Sections was a paper on "Ultra-Violet Radiations and Their Uses in the Pharmaceutical Laboratory," by Curt P. Wimmer. The demonstrations by the author proved interesting and instructive, and held the attention of the members. After its conclusion the Joint Session was adjourned.

SECTION ON PRACTICAL PHARMACY AND DISPENSING.

The first session of the Section on Practical Pharmacy and Dispensing was convened at 9:15 A.M., August 25th, by Chairman Adley B. Nichols. The Chairman announced that owing to the unavoidable absence of Secretary Dirstine it was necessary to elect a Secretary, *pro tem;* also, that a member of Professor Dirstine's staff, R. R. Frew, who was informed relative to some of the work Secretary Dirstine had done, was present; he nominated Mr. Frew for the office. The nomination was seconded by P. Henry Utech, and he was elected. The Vice-Chairman being absent, Mr. Frew presided during the reading of Chairman Nichols' address; it follows:

THE CHAIRMAN'S ADDRESS.

BY ADLEY B. NICHOLS.

The report of your chairman will be very brief and properly so, for inasmuch as he has been honored by election to this office for two consecutive years, and having also served in the

absence of the regular chairman the year previous, his ideas for an address are about played out. He is also thoroughly convinced that the members of this Section attend primarily to hear papers read and to enter into the discussions which follow, and not to have their time monopolized by a chairman who feels that he must present an address because that is the usual procedure.

We decry the fact that our membership does not include a greater number of practical retail pharmacists, for this is their section, or so we have tried to believe. But we find our membership primarily made up of hospital pharmacists, who, of course, are not drawn aside from the true practice of pharmacy by commercialism and the other demands made upon the average pharmacist; staff representatives of manufacturing houses, who are principally engaged in research work; and pharmacy teachers who are struggling year after year to make themselves believe that the pharmacist has not changed, but still makes his tinctures, fluidextracts, syrups, elixirs, etc.

However, after spending another summer in a retail store located in a good residential district, a store that would not be classified as a commercialized establishment but just as a typical neighborhood type and looked up to for its prescription work and store policies in general, the writer has been shocked times without number and has come to realize that the average retailer cannot be as keenly interested in our section as we had led ourselves to believe.

This has been called a specialized age and specialization in any field tends to change the routine of that field entirely. Machines have been developed which have completely altered our economic system and we have seen the upheavals in many branches of industry due to these new factors. To-day, pharmacy is in the midst of one of these upheavals just as surely as any industrial plant ever was and is more or less blindly struggling along trying to find a solution for its problem. Probably the initial cause for this disturbance came when pharmaceutical manufacturers started to function and by taking advantage of their equipment and overhead began to prepare the standard pharmaceuticals such as tinctures, fluidextracts, etc., and although many fought against it, the retailer finally found it was cheaper for him to buy these products than it was for him to attempt to prepare them himself and finally, allowed his pride to step aside until now we find few stores equipped to handle even the simplest types. Secondly, the physician has become a specialist and this in turn has altered the close relationship between pharmacist and physician which was found when most doctors were general practitioners and were writing prescriptions based upon their own knowledge of Materia Medica. And finally we return to the manufacturer again who prepares a special elixir or syrup, markets it under a specific trade name and details it to the physician who in turn is saved time and trouble in racking his brain about various items and the doses of each by prescribing the new "ready made" remedy. And this is not all! We have continually urged the pharmacist to work along with the physician and to coöperate with him at all times, but I doubt if that question often arises in the case of the physician, as one incident after another has occurred to my knowledge during the past summer, more so it seems than ever before. A new vitamine tonic is put out by a certain firm and is packaged as a product to be dispensed on prescriptions only, detailed to physicians, but not advertised to the laity. Our first prescription arrives, and within a week we have a call for it over the counter; the doctor told her to "get a bottle of it." Another experience was with another of the new vitamine preparations, wholesaling well over a dollar and the doctor tells the patient that it will cost a certain sum, an amount that does not even give the pharmacist the usual 30 per cent recognized or straight merchandise over the counter, to say nothing of the usual basis for prescription pricing. Then there are the up-to-date patients who think they will put it over the pharmacist by reading their own prescriptions and nonchalantly come in and ask for various items and invariably unable to master the names long enough to place their order. Recent examples of this have been calls for "a small bottle of Elixir of Pepin Bismuth and a little Strychnine," a preparation that is surely not advertised in the daily press; "twenty-five Sod. Salicylate, each 5 gr. whatever they are, and also twenty-five acid acylsol 5 gr. each;" and another call for what was supposed to be argyrol, but when the question of what strength was raised it brought forth a very worried look and one of deep concern as though they felt it might have been a dangerous undertaking after all.

These are some of the things which the retail pharmacist is facing to-day and it surely is most discouraging to see such conditions existing. What the solution will be remains to be seen. We can rest assured that the public did not attempt to read their prescriptions back in the days of the gunshot mixtures and I doubt if there would be any of it now, if it wasn't for the prescribing

of ready made remedies. However, I do feel that the practice of a physician telling a patient to get this or that is wrong, and it might be properly in order for this Section to pass a resolution condemning that practice and presenting it to the proper medical authorities for their further consideration.

I want at this time to express my appreciation for the splendid work our Secretary, Prof. P. H. Dirstine has done in preparing the interesting program which is to follow, and I am sorry indeed that he is unable to be present to enjoy the fruits of his work.

Motion was made and carried to receive the address and that a committee of three be appointed to consider preparing a resolution in accordance with the suggestion of the Chairman.

Chairman Nichols resumed the chair and reported for the Secretary on the activities of the Section. "Largely as a result of the work by the Secretary the program of the Section had been made possible," he said.

(*Abstracts of discussions of contributions will be printed when the papers are published, unless some action requires prior publication.*)

The following papers were read and discussed, presented in abstract, or read by title:

"Specific Gravities of Five Official Syrups," by W. G. Crockett and J. E. Jarret. (Discussion.)

"Pharmaceutical Manufacturing and Its Relationship to the Drug Store," by Edward D. Davy. (Discussion.)

"Why Should a Pharmacist Do Any Manufacturing?" by Leon A. Thompson. (Discussion.)

"Epiphytic, not Parasitic," by F. J. Wulling. (Read by title.)

"The Chlorine Productivity of Mixtures of Potassium Chlorate and Tincture of Ferric Chloride," by Bertha L. DeG. Peacock and Josiah C. Peacock. (Discussion.)

"The Assay of Syrup of Calcium Iodide," by H. A. Langenhan and C. J. Braford. (No discussion.)

"The Assay of Compound Solution of Hydrastine," by H. A. Langenhan. (No discussion.)

"Decomposition of Hypochlorite Solutions," by H. A. Langenhan and R. C. Cain.

"Synonyms, a Valuable Asset to the Practical Pharmacy," by Otto Raubenheimer. (Discussion.)

"The Incompatability of Sodium Salicylate and Sodium Bicarbonate," by John C. Krantz, Jr. (Discussion.)

"The Preparation of Phenolated Iodine Solution, N. F.," by John C. Krantz, Jr. and C. Jeleff Carr. (No discussion.)

"Notes on the Assay Processes of Sodium Nitrite," by Edward D. Davy. (No discussion.)

"High Class Pharmacy," by J. Leon Lascoff. (Read by title.)

A paper by "Vernon Mount" (pen name) was presented in which the adoption of a flag for pharmacy was considered. There was considerable discussion which resulted in a motion that the author of the paper be appointed Chairman of a committee of three; the two other members of the committee to be selected by himself and that this committee report to the Section at the meeting in 1929. (It will be noted that the paper was presented under a pen name, but as the only action taken was to have a committee appointed to consider the subject further and report to the Section—it is really an incomplete action—hence the *pen name* will not, in the opinion of the Editor, be objected to; as far as the latter could determine the proposal is to receive further study by the author and two other members are to confer with him in studying the practicability and advisability of creating an official pharmacy flag.)

Chairman Nichols appointed the Committee on Nominations and a Committee on Resolutions. As members of the former; E. F. Cook, Louis Saalbach and H. A. Langenhan. On the latter: P. Henry Utech, J. C. Peacock and C. M. Snow.

The first session of the Section was then adjourned.

JOINT SESSION OF SCIENTIFIC SECTION AND SECTION ON PRACTICAL PHARMACY AND DISPENSING.

(For program see end of Scientific Section, preceding first session of this Section.)

SECOND SESSION.

The second session of the Section on Practical Pharmacy and Dispensing was called to order by Chairman Nichols at 2:30 P.M., August 24th.

The report of the "Committee on Glass Standardization and the Relation of Glass to the Preservation of Pharmaceutical Preparations" was read by Chairman H. V. Arny. On motion, duly seconded, it was voted to accept the report. (It is printed under "Committee Reports" in the October JOURNAL, A. PH. A.)

Reading of papers was proceeded with, as follows:

The papers by H. V. Arny and Frederick J. Wulling were read, discussed, accepted, and it was also voted to refer them to the attention of President D. F. Jones.

"An Interesting Emulsion," by Wilbur L. Scoville. (No discussion.)

"The Effect of Heat on the Viscosity of Mucilage of Tragacanth," by L. F. Gabel. (No discussion.)

"The Prescription Department," by Robert J. Ruth. (Discussion.)

"An Improvised Nitrometer for the Assay of Spirit of Nitrous Ether," by C. L. Cox. (No discussion.)

"Three Unusual Prescription Formulas," by Ralph E. Terry. (No discussion.)

The Committee on Nominations presented its report, naming the following officers:

Chairman, P. H. Dirstine, Pullman, Wash.; *Vice-Chairman*, E. O. Leonard, Pocatello, Ida.; *Secretary*, H. C. Newton, Omaha, Neb.; *Delegate to the House of Delegates*, H. A. Langenhan, Seattle, Wash.

The *Committee on Resolutions* presented the following, which was approved and adopted:

> Your Committee appointed to consider the suggestion contained in the address of the Chairman, beg to submit the following report:
>
> We believe with the Chairman that the promiscuous purchase of more or less dangerous drugs with which the public is not familiar should be discouraged by the pharmacist.
>
> (Signed) J. C. PEACOCK,
> CLYDE M. SNOW,
> P. HENRY UTECH, *Chairman*.

There being no further business the second session of the Section on Practical Pharmacy and Dispensing was on motion, duly seconded and carried, adjourned.

SECTION ON EDUCATION AND LEGISLATION.

The first session of the Section on Education and Legislation, A. PH. A., was convened by Chairman M. N. Ford at 9:30 A.M., August 22nd. Charles J. Clayton presided during the reading of the Chairman's address; it follows.

THE CHAIRMAN'S ADDRESS.

BY M. N. FORD.

In accordance with established custom I find myself before you with what is termed a chairman's address. We have many interesting papers to be read before this Section and we should give ample time for their consideration. These papers will be of interest to all and evidence that your Secretary has been very active in securing the contributions.

Much can be said about education and legislation and, especially, the part this Section has had in securing pharmaceutical education and legislation. I do not think it is the proper time to go into the detail of these activities and report on the many things this Section has accomplished; however, I briefly refer to the establishment of the Section on Pharmaceutical Education and the Section on Legislation, in 1887; two years later, in 1889, the two Sections were combined and this Section has continued the work. From this Section came two of the most powerful and influential associations in pharmaceutical affairs—the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy. These two great associations will have much to do with pharmaceutical advancement in the future and, with their present organization, they can accomplish things more effectively than in the past. We find in the formation of the National Association of Boards of Pharmacy, in 1904, that similar attempts had been made for a number of years prior to organize the representatives of the boards of pharmacy who attended the AMERICAN PHARMACEUTICAL ASSOCIATION meetings. This evidences that in order to accomplish good we must keep everlastingly at it until the goal is reached.

Dr. Whelpley knew he was right when he contended for organization of the representatives of boards of pharmacy; for twelve or more years he pleaded for assistance which finally came and his efforts were rewarded. As a result of Dr. Whelpley's labors we now have a combined force for the advancement of pharmaceutical affairs. After the colleges and the boards had held annual meetings year after year, they eventually realized the importance of joint meetings whereby the members come into closer contact, understand each other better and are enabled to coöperate.

Four years are not too many for preparing pharmacy students for a profession that gives the public protection. These years in college alone will not make a successful pharmacist, neither will seven years in college make a successful medical practitioner. The training and education should, however, give pharmacy students a capacity to become successful pharmacists. The proprietors of pharmacies have a large part to do in the future of the profession. They can give the apprentice, or the young registered pharmacists, the proper instruction in how to conduct a successful pharmacy. I do not believe in discontinuing the methods by which a successful pharmacy was operated years ago, but we must keep abreast of the times, just as other professions and trades, in order to achieve success and have pride in our art and profession.

It does seem to me there should be a uniform rule in regard to the credit a student shall receive when going from one college to another. In Ohio, we have certifications come to us showing that students have been in the arts course for two years and then transferred to the pharmacy course, graduated and given a four-year degree at the end of two years' attendance in the pharmacy college. This, of course, requires that the applicants for the state board examination have at least two years of practical experience. It has been brought to our attention that certain colleges of pharmacy will certify to four-year graduation requirement when the applicant has been in the college of pharmacy only two years. This, I understand, is practiced by some universities and I am not inclined to object to it, but would it not be proper to certify that the graduate had been in the college of pharmacy two years and had received credit for two years, work done in some other college of recognized standing, which entitled him to the four-year degree. Education is education and it matters not where one receives his credits so long as they are actually earned in some recognized educational instution; therefore, the junior course being proposed in universities, to my mind, should be very acceptable to the pharmacy colleges and to the pharmacy boards; I would suggest this Section give consideration as to the advisability of asking the ASSOCIATION to recommend the establishing of a junior course in universities that would be applicable to the pharmacy colleges.

It seems to me it is not so much legislation that we need, but, rather, observance of the laws we now have. Since the enactment of the National prohibition act, it seems there has been a general disregard for all laws, including pharmacy. I think we are all agreed that the prohibition act and the narcotic act are both very burdensome to the pharmacist; however, it is my opinion that pharmacy cannot be conducted without handling narcotics, alcohol and alcoholic liquors. We have declared for alcohol and whisky by placing them in the Pharmacopœia; the Government has decided that pharmacists are the proper persons to dispense them; therefore I believe it is the duty of pharmacists to have them in stock for dispensing when legally prescribed. In reaching this decision I am mindful of the trouble so many pharmacists have had, but I claim that the regulations can be complied with, and it is for the best interests of pharmacy that the reputable pharmacies handle both alcohol and whisky. I do not mean that every store should have a permit to handle alcohol and alcoholic liquors, and our experience, in Ohio, would prompt us to criticize the Government for granting permits to certain stores, although we are mindful of the fact officials have no legal right to refuse a request for a permit when properly made. The records of the Ohio Board of Pharmacy will prove clearly that we do not approve in the trafficking of intoxicating liquor, evidenced by the number of certificates that have been revoked or suspended for violations of the prohibition act.

We have in our state, and I presume it is so in every state, many stores that have discontinued the handling of narcotics on account of the regulations and the responsibility in handling them. This, to my mind, is a very serious mistake. The public realizes that pharmacists are not trafficking in narcotics; therefore, I think every pharmacy deserving of the name should continue the handling of narcotics and use every effort possible to help the department in promulgating regulations that will tend to help the legitimate dealer. This is more of an educational

matter than legislative and I am going to ask this Section to take some action by requesting the ASSOCIATION to urge its membership to continue the handling of narcotics.

Your chairman has been in communication with pharmacists of the military service on the subject of legislation for pharmacists in the military service. After careful study, I am of the opinion this Section should take some action in approving some legislation to be submitted to Congress recognizing pharmacy in the military service. I submit with my address the following tentative draft of pharmacy bill and ask the Section to approve the bill as a whole or with such amendments as may be deemed necessary and request the ASSOCIATION to endorse it.

In closing the Chairman wishes to thank the authors of the papers on the program of this Section and Secretary Winne for his successful efforts in the preparation of the program.

Jacob Diner moved that the address be received and the resolutions be sent to the House of Delegates for consideration by the Committee on Resolutions.

Charles W. Ballard seconded the motion and stated that the House of Delegates had approved a resolution dealing with the creation of a pharmacy corps in the U. S. Army.

W. Bruce Philip referred to the pharmacists' obligations under laws and regulations and impressed that the progress of pharmacy depended on the practice of pharmacy in the drug stores.

(*Abstracts of discussions of contributions will be printed when the papers are published, unless some action requires prior publication.*)

PAPERS.

The following papers were read and discussed, presented in abstract, or read by title:

"Graduate Education in Pharmacy," by Glenn L. Jenkins. (No discussion.)

"Common Sense and Drug Store Practice," by Edward Kremers. (Presented in abstract.)

"The Ratio of Drug Stores to Population," by Edward Kremers. (Presented in abstract.)

"Federal and State Legislation," by Arthur G. Hulett. (Read by title.)

"Pharmacy for Pharmacists Only," by Lucius L. Walton.

The paper by L. L. Walton is printed in the September JOURNAL, page 900.

John R. Minehart stated that if there are men in the field of pharmacy who oppose bills which have been carefully drafted and seriously considered by pharmacists, appointed by organizations devoted to the interests of pharmacy, then the body of pharmacists should stand back of the committees having the measures in hand. He found that pharmacists in Pennsylvania are taking more pride in the profession of pharmacy since the passage of the Ownership Law, and this will mean additional members in the State and National associations, because something has been accomplished for pharmacy.

Jacob Diner referred to General Butler's idea—that the self-respect of the individual is toned up by being well-dressed. He applied that to a law which raises the standard of pharmacy and, hence, stimulates a greater pride in it.

H. C. Wood questioned whether the stocking of certain side-lines had an elevating influence on the pharmacists; he contended that knowledge and skill were essentials of professional qualifications.

R. A. Lyman supplemented the remarks of the preceding speaker.

"Professors of Pharmacy," by Wortley F. Rudd. (No Discussion.)

"Fundamental Factors in the Application of Pharmacy Laws," by Robert L. Swain. (Discussion.) See September JOURNAL, pages 858–862.

"The Desirability and the Absolute Necessity of Providing Some Type of Directed Practical Experience in Our Colleges for the Undergraduate Student of Pharmacy," by Rufus A. Lyman. (Discussion.)

"The Senselessness of the Present Apprenticeship System on Pharmacy and a possible Solution of the Problem," by Rufus A. Lyman. (Discussion.)

Chairman M. N. Ford appointed Charles J. Clayton, A. C. Taylor and W. F. Rudd as members of the Committee on Nominations.

The first session of the Section was then adjourned.

SECOND SESSION.

The second session of the Section on Education and Legislation was called to order by Chairman M. N. Ford at 9:00 A.M., August 24th.

The reading of papers was continued.

"Educational Standards for Teachers of Pharmacy," by B. V. Christensen. (No discussion.)

"Drug Store Experience and Its Educational Value," by Horatio C. Wood. (Printed in September JOURNAL, page 850.)

"Some Desired Legislation," by H. C. Christensen. (No discussion.)

"Pharmacognosy, Its Cultural and Commercial Value to the Pharmacy Students," by O. P. M. Canis. (In abstract.)

"Business and Professional Ethics," by E. C. Callaway. (No discussion.)

The Committee on Nominations reported the following nominees: *Chairman*, A. L. I. Winne, Richmond, Va.; *Vice-Chairman*, L. D. Havenhill, Lawrence, Kans.; *Delegate to the House of Delegates*, M. N. Ford, Columbus, O.; *Alternate Delegate*, Charles F. Poe, Boulder, Colo.

In due order the nominees were unanimously elected. After installation of the officers, a motion to adjourn was carried.

SECTION ON COMMERCIAL INTERESTS.

The first session of the Section on Commercial Interests was convened by Chairman C. Leonard O'Connell at 9:00 P.M., August 23rd. The first order of business was the reading of the Chairman's address; it follows:

CHAIRMAN'S ADDRESS.

BY C. LEONARD O'CONNELL.

In the Section on Commercial Interests all members of the AMERICAN PHARMACEUTICAL ASSOCIATION not only have a right but in a way have an obligation to interest themselves to the extent of aiding in any way possible to solve its particular problems. In this Section, as well as every other, there are always certain groups more vitally affected than others by its method of procedure. However, any changes of a fundamental nature by such a group must necessarily have a marked influence for good or ill on all groups engaged in pharmacy.

The sessions this year have been planned to afford opportunity for representatives of the different groups in pharmacy to take an active part in the program. Retail pharmacists, teachers, editors, writers, salesmen, members of state boards, in fact men interested in practically all fields of pharmacy are represented on the program, and it is the hope of the officers that this idea may be extended and bear some fruit in the way of making the problems pertinent to the commerce of pharmacy a matter of thoughtful concern to all members of our ASSOCIATION.

Many competent thinkers in pharmacy have become definitely convinced that the claims of those who advocate some training for pharmacists in the fundamental principles upon which any business enterprise necessarily depends for its successful continuance, must be seriously considered, and may not justly nor safely be dismissed by general statements of certain dangers either present or to be expected by any departure from traditional methods of training pharmacists.

Unless we earnestly attempt to solve some of the problems now confronting retail pharmacy, it will be futile to expect any considerable support from most practicing pharmacists. The vast majority of retailers to-day, at least in the urban areas, believe that the time has come to face the fact that the practice of pharmacy has undergone marked changes in the last few decades, in consequence of which the training in the schools and colleges must eventually be so fashioned, modified, supplemented or extended, that students will be more adequately equipped for lives of successful service.

All groups agree that the professional aspect of the calling is the heart of pharmacy, in fact the essence or characteristic that has earned for pharmacy such a high place in the minds of men throughout many generations of faithful service to a discriminating public. Present conditions demand, however, that the pharmacist who desires to afford the professional service for which he was primarily intended must be equipped to conduct his affairs in such a manner that he may maintain himself in keeping with his needs and desserts. In the absence of the knowledge necessary to achieve an economic basis, opportunities for his essential service will be appreciably curtailed and in some cases may eventually fade out completely.

The proper solution of the question of some commercial training for pharmacists will, undoubtedly, require the combined effort and careful thought of all groups engaged in pharmacy.

This Section might do pharmacy a service by suggesting to the state associations that they could aid materially in this problem. Such action on our part certainly would strike a responsive note among practicing pharmacists.

The change in drug store practice has resulted in another problem which, at present, seems to be in a hopeless state of flux, namely, the matter of drug store experience. Without going into the arguments in relation to the advisability or lack of advisability of requiring experience for registration, but rather postulating it as a requirement for registration which, indeed it is in most states, the changing character of drug store practice will eventually demand that where experience is necessary for registration, some definition of the nature of this experience must be set forth as a norm.

If practical experience in a drug store is demanded as a prerequisite for registration as a pharmacist, surely then the responsible officers of the state, whose duty it is to pass upon the qualifications of candidates for registration, should be aided by all groups in gathering proper data so that some standard of experience may be determined. Perhaps it might be possible to obtain some plan of actual supervised experience, the adoption of which would have a beneficial effect upon the future of pharmacy.

May not this Section urge upon the state associations the advisability as well as the desirability of aiding in every way possible in a proper solution of this problem of drug store experience?

By adding its weight to those of other groups who are concerning themselves with these two important problems the Section on Commercial Interests will serve notice that it is interested not alone in the detailed and specific subject matter ordinarily looked upon as affairs of commerce, but also in problems of general nature the proper solution of which will have a great effect for good or evil upon the practice of pharmacy. In other words this Section, while deeply mindful that its chief business is to consider the specific problems of the commerce of pharmacy, also realizes that in a large way, its reason for existence is inextricably bound up in the professional aspect of the calling, and it is as deeply concerned in matters affecting us professionally as any other group in the ASSOCIATION.

On motion of P. Henry Utech, seconded by Leo. G. Penn, it was voted to refer the address to the House of Delegates.

The Secretary stated he had no report.

Abstracts of discussions of contributions will be printed when the papers are published, unless some action requires prior publication.

The following papers were read and discussed, presented in abstract, or read by title. (*The sequence of papers is not given in the order according to which they were read, owing to misunderstanding of the reporter.*)

"Some Observations on Packaged Household Drugs," Bernard F. Daubert. (Discussion.)

"The High Cost of Publicity," by P. Henry Utech. (Discussion.)

"The Line Up," by John Funk. (Discussion.)

"Meeting the Customer on the Right Side of the Show Case," by W. Bruce Philip. (Discussion.)

"Mobilization of Pharmaceutical Forces," by J. G. Noh. (Discussion.)

The foregoing paper was by vote referred to the Conference of Pharmaceutical Secretaries.

The Chairman appointed as members of the Committee on Nominations, P. Henry Utech, *Chairman*, John Funk, B. F. Daubert.

The first session of the Section of Commercial Interests was then adjourned.

SECOND SESSION.

The second session of the Section on Commercial Interests was convened by Chairman C. Leonard O'Connell at 8:00 P.M., August 23rd.

The reading of papers was proceeded with:

"Insurance," by Daniel O. Wolff. (No discussion.)

"Sell Sugar Test with Insulin," by J. C. Peacock. (Discussion.)

"Where Does a Drug Store Get Its Business?" by Paul C. Olsen. (Printed in October JOURNAL, pages 981–984.)

"The Pharmacist as a Professional and Commercial Man," Harold W. Hutchins. (Read by title.)

"Some Commercial Aspects of Ethical Professional Pharmacy," by Frank T. Weber. (Read by title.)

"Some Suggestions for Simplification of Seltzer's Procedure in Prescription Pricing," by Leonard Seltzer. (Discussion.) Printed in November JOURNAL.

"Commercial Pharmacy in Relation to Professional Pharmacy," by C. E. Mollett.

"Following the Leader," by Robert P. Fischelis.

"Business and Professional Ethics," by E. C. Callaway.

"Medicines of Identified Properties—After Price Maintenance, What?" by Louis Emanuel. (Read by title.)

"Peregrinations of Pharmaceutical Products," by R. J. Ruth.

The Committee on Nominations announced the following nominees for officers of the Section: *Chairman*, R. B. Rothrock, Mount Vernon, Ind.; *Vice-Chairman*, Denny Brann, Des Moines, Ia.; *Secretary*, Joseph G. Noh, Harrisburg, Pa.; *Delegate to the House of Delegates*, C. Leonard O'Connell, Pittsburgh, Pa.

The report of the Committee on Nominations was, on motion duly seconded, adopted and the nominees declared elected as officers of the Section for the ensuing year.

A motion to adjourn was seconded and carried.

SECTION ON HISTORICAL PHARMACY.

The first session of the Section on Historical Pharmacy was convened by Secretary Ambrose Mueller at 9:00 P.M., August 22nd. The Secretary announced the absence of Chairman Porterfield, and the Historian suggested that the Secretary act as Chairman of the Section. This was agreed to and the Historian was requested to act as Secretary.

The report of the Chairman was read by the Acting Chairman; it follows:

CHAIRMAN'S ADDRESS.

BY W. P. PORTERFIELD.

Of all the sections concerned with the AMERICAN PHARMACEUTICAL ASSOCIATION there is none which affects pharmacy, in its generalized aspect, as much as the Section on Historical Pharmacy. The Proceedings of this Section are of distinct value not only as concerns past events, but also as applied to present-day conditions and that which may take place in the future. History, as defined by one authoritative source, may be divided into three classes, namely: (1) Chronicle, a record of successive times; (2) Narrative, the history of events or course of events; (3) Philosophical, which considers the causes of events and resulting consequences.

Has the Section on Historical Pharmacy of the AMERICAN PHARMACEUTICAL ASSOCIATION fulfilled all the requirements expressed in the definition just given? I believe that an analysis of the programs which have been presented in years past proves conclusively that we have been working well in that direction. It may be that in some instances our program has not fulfilled entirely the expectations which some of us may desire, but it must be kept in mind that the work of this Section is in the embryonic stage and we have not begun to tap all the resources which are ours to command.

Has the Section on Historical Pharmacy any responsibility that concerns the pharmacists of this country? There surely is no question in the mind of any thinking pharmacist but that such a responsibility rests upon this Section for it is our duty to pave the way to better conditions in pharmacy in the future. Much has been written concerning the professional aspects of pharmacy in the past and many assertions have been made upholding the same thought for pharmacy at the present time, but what of the future? In this respect I believe that this Section has a decided responsibility to pharmacy in this country and our efforts in the future should be devoted largely to looking in this direction.

The Chairman's address delivered at our last session included an account of the History of American Pharmacy. The amount of work entailed in the compilation of the immense amount of material is fully appreciated but, nevertheless, an effort should be made to complete this work within the next year. There is no question but that a vast amount of time, effort and energy have been devoted and are being applied to pharmacy and it should all be assembled in as systematic a manner as possible for it will be of distinct value to American Pharmacy.

There has been formed a conference consisting of secretaries of various state and other pharmaceutical associations and an effort should be made by this Section to stimulate this group, individually and as a whole, in the matter of compiling information concerning the pharmacy of the states.

It is a pleasure indeed to look back upon the proceedings of past years and realize that this Section is fulfilling its function more and more every year and I trust that the future will bear evidence of a still greater increase in the value of this organization.

It was voted to accept the report.

The acting Chairman read his report as Secretary, giving an account of the activities of the Section. (It is embodied in the report to the House of Delegates.) The report was accepted.

A letter was read from the ve ran Honorary Member of the A. PH. A., in England, Dr. E. M. Holmes. He stated that his age (85 years) prevented him from looking up material for an article he would like to present. He referred to his part in the upbuilding of the Museum of the British Pharmaceutical Society, and to conditions in pharmacy; also, to the establishment of the *Quarterly Journal of Pharmacy* (British) and complimented the JOURNAL A. PH. A. He closed with greetings and good wishes.

The report of the Historian was read in abstract; the report follows:

THE HISTORIAN'S REPORT.

BY E. G. EBERLE.

The history of synthetic chemistry dates from the year of Friedrich Wöhler's publication of the discovery of the synthesis of urea, 1828; and this is the centenary year of that epoch-making discovery. Liebig and Wöhler were co-workers; the latter was for a time pharmaceutical inspector. The American Chemical Society plans to celebrate the centenary of this achievement by a special program at its Boston meeting in September. With the publication of Wöhler's classic paper, synthetic chemistry may be said to have had its origin.

Fifty years ago our fellow-member, John Uri Lloyd, contributed a series of papers to the AMERICAN PHARMACEUTICAL ASSOCIATION, embodying studies in physics as applied to or involved in pharmacy. Dr. Wolfgang Ostwald recognizes the work of Professor Lloyd as the foundation of colloidal chemistry, and the continued interest of the former in these investigations is shown by a report made in the August number of the JOURNAL A. PH. A. These historical references are made to show the participation of pharmacists in science and presents an opportunity of recording the importance of pharmacy therein.

This is also the centenary year of the birth of Frederick August Flückiger, an honorary member of our ASSOCIATION until his death December 11, 1894. The *Gesellschaft Für Geschichte Der Pharmazie* has published a sketch of Dr. Flückiger by Privatdozent, Dr. J. A. Häfliger of Basel. The booklet has nine illustrations: On the cover, a picture of Dr. Flückiger; the Flückiger Medal which was founded in 1892, a certificate as Honorary Member of the Pharmaceutical Society of Great Britain, of the Pharmaceutical Society of Brussels, of the Society of Natural History of Switzerland, certificate of Honorary Membership in the College of Pharmacy in the State of New York, certificate of the Italian Pharmaceutical Association of the Austrian Society and finally a half-tone of the grave of Professor Flückiger in Berne.

We have lost three of our honorary members since last we met, Sir William S. Glyn-Jones, of England; Dr. John George Gadamer, of Germany; Dr. M. Leon Guignard, of France; also three former Presidents, and our Honorary President of the year coming to an end, and the founder of a scholarship.

Few, if any, pharmacists have contributed so largely to the welfare of the retail drug trade of Great Britain as Sir William S. Glyn-Jones, and his work in Canada had gone well forward at the time of his demise. In addition to his connection with the Proprietary Articles Trades' Association, Sir William was Secretary of the Pharmaceutical Society of Great Britain from 1919–1926. As a youth he served apprenticeship and, later, engaged as pharmacist on his own account. He studied law and was admitted to the bar in 1904, and was a member of Parliament from 1911 to 1918; in 1919 he was knighted.

Prof. Dr. John G. Gadamer was one of the foremost pharmacists engaged in research work. He succeeded the late Prof. Ernst Schmidt as editor of the Pharmaceutical Archives and also became his successor at the University of Marburg, where he carried on most of the work that

contributed to his great name in research. After the death of his predecessor he revised and reëdited the several books of which Professor Schmidt was author. Possibly his outstanding work was on certain alkaloids and glucosides; he explained the conversion of hyosciamine into atropine and of *d*-scopolamine into *l*-scopolamine.

Prof. Leon Guignard contributed largely to research by his investigations of diastases, glucosides and principles which furnish cyanhydric acid in various plants, and the constituents of the cruciferous and other families. To him is also ascribed much knowledge relative to mucilage secretion that exists in the *Laminaires* and of the oleoresins of the *Copaifera* and of other leguminous plants, and also valuable studies on the origin and structure of seeds of a large number of plant families. In earlier years he attained distinction as hospital pharmacist. Many honors came to him on account of his achievements, by presentations of degrees and medals of the highest order. He was Professor of Botany at the University of Lyons and, later, in the Pharmacy School of Paris.

Former President, Joseph L. Lemberger, probably has the distinction of longer membership in the AMERICAN PHARAMACEUTICAL ASSOCIATION than any other member, nearly 70 years. During most of these years he was active in its promotions and a frequent contributor to its Sections. The late John F. Hancock said of him, "He is a man small in stature with a big soul. During his long membership he has contributed his activity, best thoughts and experience. His literary contributions are worthy of perusal. The writer has never known him to intentionally misrepresent facts."

Caswell A. Mayo was one of a number of pharmaceutical journalists who presided over the AMERICAN PHARMACEUTICAL ASSOCIATION and during the annual meetings of many years he added zest and interest and was untiring in his efforts for pharmacy and the ASSOCIATION. He enjoyed the companionship of friends and was ever loyal. His editorial work continued over a period of 40 years. Mr. Mayo did not attend the meeting in St. Louis. He was missed and received a message from his friends in attendance. In an appreciative reply he penned a poem, "The Years Pass On." It closed with these lines:

"I thank you for the message which you send
To one who's proud to reckon you as friend;
And only hope next year a kind fate
Shall let us meet again in that far State
All girt with seas and mountains, and whose lakes
A joyous summer play-ground makes.
But if we shall not meet; if the hand of Fate
Shall beckon one of us to pass beyond the gate
Of life; you will know your kindly thought
Of me in absence, has keen pleasure brought
To one left lonely by the passing years
Whose loneliness your friendly message cheers."

Few retail pharmacists have been so closely identified with pharmacy in its several divisions as former President George M. Beringer. He chose pharmacy for his life work as a youth and continued in the service until his passing, and during these years of active life he had been apprentice, pharmacy owner, educator, manufacturer and wholesaler and was always ready to work for those engaged in the drug business, pharmacy, for the development of business in general, the municipality and the state and country. Careful in all of his engagements, he stood firmly for whatever he deemed right; there was never a question about his position.

At the time of his demise, he was a member of the Committee on Publications of the A. PH. A. He was a member of the Committee of Revision of the U. S. Pharmacopœia, 1910 and 1920, and of the Committee on National Formulary since 1908, in the work of which his comprehensive knowledge of pharmacy and allied sciences, and his critical judgment did much to advance the practicality of these standards.

Mr. Beringer was trained by Charles Bullock, and the latter by Daniel B. Smith, the first President of the A. PH. A., therein we can discern that influences impress the individual—early in life, like his predecessors, the deceased became a devotee of research. His contributions to scientific organizations and periodicals have been many and of great scientific and practical value, and his influence has been for great good to American Pharmacy.

Honorary President, Edward Mallinckrodt, died during his term of office. With his brother he engaged in the manufacture of chemicals, after conclusion of studies in the Fresenius Laboratory at Wiesbaden, Germany. He was a lover of flowers and art, and interested in promotions to beautify his home city, and gave largely to institutions for the alleviation of suffering. A co-worker said of him:

"He was a remarkable man, with the highest sense of honor, integrity and business ethics. In the manufacture of medical products his principle was to produce nothing but the best. One of his chief concerns in life was the advancement of science and education, and he did much to give young men opportunities for scientific training."

Samuel W. Fairchild was the founder of pharmacy scholarships in Great Britain and the United States. His activities outside of pharmacy indicate that he believed in being diligent and active in doing good. He was Vice-President of the Sevilla Home for Children, incorporator of the Bronx Botanical Gardens; for his services during the war France made Mr. Fairchild a chevalier of the Legion of Honor; Belgium bestowed upon him the Cross of Officer of Leopold Second; Greece decorated him with the Golden Cross of the Royal Batallion of George First.

This report would become too extended if everyone of our members who passed into the Great Beyond during the past year was sketched as those preceding; the purpose is not to single out these members for any other reason than that the ASSOCIATION gave them special recognition; Mr. Fairchild is included among the foregoing because of the Scholarship established by him. All of the deceased during the year are named in the following list. They were faithful members of the ASSOCIATION; brief sketches have appeared in the JOURNAL, and we here pay them tribute. They dignified pharmacy and reflected credit by their service.

George M. Beringer, Camden, N. J.; Julian W. Bullock, Clifford, Mich.; Theodore Campbell, Philadelphia, Pa.; Louis Cramer, Saratoga Springs, N. Y.; Harry W. Crooks, South Orange, N. J.; Phil Diamond, Sacramento, Calif.; Chas. T. Dill, New York, N. Y.; George J. Duerr, Brooklyn, N. Y.; Wm. D. Duncan, Ottawa, Ill.; A. Morris Earnshaw, E. Greenwich, R. I.; Wm. S. Eichenberger, East Greenwich, N. Y.; Samuel W. Fairchild, New York City; John C. Falk, St. Louis, Mo.; John George Gadamer, Germany; Sir Wm. S. Glyn-Jones, England; Frederick A. Grazer, Sacramento, Calif.; M. Leon Guignard, France; Richard Gwatmey, Richmond, Va.; Wm. A. Hall, Detroit, Mich.; Alri Hammar, San Francisco, Calif.; Francis Hemm, St. Louis, Mo.; Charles H. Hitchcock, Brookline, Mass.; Frank E. Horak, Cedar Rapids, Ia.; Aaron Keilin, New York, N. Y.; Mrs. Pauline Kurz, Detroit, Mich.; Joseph L. Lemberger, Lebanon, Pa.; James E. Lilly, Indianapolis, Ind.; George W. McDuff, New Orleans, La.; Edward Mallinckrodt, St. Louis, Mo.; Caswell A. Mayo, New York City; Edward Ludwig Pieck, Covington, Ky.; Edward Augustus Sayre, E. Orange, N. J.; Christian Schertz, New Orleans, La.; George E. Schweinfurth, Brooklyn, N. Y.; Alexander W. Scott, Ft. Collins, Colo.; Mrs. Mabel A. (Bauer) Stegmayer, New York City; Edgar D. Taylor, Richmond, Va.; John B. Thomas, Baltimore, Md.; James Vernor, Detroit, Mich.; John Crawford Wallace, New Castle, Pa.; Edward Waters, Whiteside, Washington, D. C.

Recently "A Florentine Diary from 1450–1516," by Luca Landucci has appeared in English translation. The diary was kept by the before-named apothecary, who lived in the stirring period of Savonarola's reforming crusade. As the book is the subject of an illustrated lecture before this Section no further reference is made thereto.

A history of Plough Court has appeared. It gives an interesting account of the activities and lineage of Allen & Hanburys, Ltd., from 1715–1927.

The Society for the History of Pharmacy has published a number of illustrated booklets; that on Flückiger has been referred to, the other relates to apothecary apprentice introductory and travel letters during 300 years.

Mrs. Whelpley's gift of Pharmacopœias was referred to last year. With these she presented a number of other books, nearly a complete set of volumes of *Meyer Brothers' Druggist*, bound volumes of the Council Letters from the beginning and almost complete up to a few years ago. Mrs. Whelpley has also promised other books. Mrs. (Wanous) Stewart, of Minneapolis, has put aside some bound volumes of various pharmaceutical Journals and P. Henry Utech also has set aside quite a number of volumes.

Dr. Joseph Jacobs has presented a gavel, made of the newel post in the home of Dr. Crawford W. Long, to the ASSOCIATION.

Former President, Dr. James H. Beal, has presented his extensive reference library, part of which has been delivered. Having served him as a reference library and known to contain many valuable volumes and taking this into consideration with the fact that the weight was nearly four tons, an idea may be had of this donation. More volumes are coming later.

Prof. Miner, of Chicago has given a full set of the JOURNALS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION. To all of these donors grateful appreciation is expressed. We have been in correspondence with some of the older pharmacies and there is promise of donations from these sources of apparatus, utensils, etc.

The Historian has with him a book of prescriptions from the store of the "Father of American Pharmacy," William Procter, Jr., donated by Mrs. Whelpley. Also a photostat copy of leaves from a prescription book, from Apothecaries Hall, New Haven, Conn., donated by Mr. Gessner. The latter are in a scrap book prepared by the Historian. This book is shown to indicate in a way what the ASSOCIATION has in photographs. The Historian has continued the collection as reported in past years. The high appreciative valuation placed on the collection of Dr. Edgar Fahs Smith by the University of Pennsylvania and presented to the University by the widow of the deceased, may serve us as a measure for the valuation of the nucleus the A. PH. A. has.

The Library and Museum will be most interesting divisions of the Headquarters Building and both of them will be of service to pharmacy, pharmacists, the drug industries and related sciences and activities.

The report of the Historian was accepted. An illustrated lecture on "Coca Eaters of Colombia" was delivered by J. T. Lloyd. The members enjoyed the lecture and extended a hearty vote of thanks. The father of the lecturer, J. U. Lloyd, referred to the hardships endured by his son during the expedition, and his illness due to tropical fever.

Edward Kremers delivered an illustrated lecture on "An Italian Apothecary of the 14th Century." The lecturer brought into his presentation a number of illustrations from other sources, but of the period covered by the Diary of Luca Landucci, of which an English translation has recently appeared. While disappointing in that there are comparatively few references to the practice of pharmacy, as Dr. Kremers said "it is valuable as a contribution to pharmaceutical biography and the few facts gleaned, as to the practice of the apothecary's art in the 'Wall Street' of the Old World during the close of the 15th and beginning of the 16th centuries, are welcome. Moreover, several entries afford specific illustrations to a fairly well understood background of pharmaceutical history."

Dr. James A. Spalding expressed his pleasure because of having been privileged to listen to the lectures and hoped they would be printed in the JOURNAL. A hearty vote of thanks was given the speakers.

A paper by Frederick J. Wulling, on "Historically-Mindedness and a Few Suggestions." It was discussed and accepted for publication.

A letter was read from Chairman Clyde L. Eddy of the Committee on the History of Pharmacy and with which he submitted the following:

To the Members of the Historical Section of the American Pharmaceutical Association:

I am pleased to submit herewith my report as Chairman of the Special Committee on the History of American Pharmacy of the Historical Section.

I proposed some years ago that the Section on Historical Pharmacy, through the collaboration of a selected group of its members, prepare a history of American Pharmacy. I suggested that this proposed history be divided into the following chapters:

1. Introductory Chapter.
2. History of Pharmaceutical Education.
3. Pharmacy Laws in America.
4. Pharmaceutical Associations.
5. The Practice of Pharmacy in Retail Stores.
6. The Development of Commercial Pharmacy.
7. Federal Laws Affecting Pharmacy.
8. The United States Pharmacopœia.
9. The National Formulary.
10. Biographical Sketches of Outstanding Members of the Profession.

11. History of Manufacturing Pharmacy.
12. The Development of Wholesale Distribution.
13. The History of Pharmaceutical Journalism.
14. Pharmacy in the U. S. Army, Navy and Public Health Service.

I am pleased to submit herewith completed first drafts of the following chapters: "U. S. Pharmacopœia," by E. Fullerton Cook; "Pharmaceutical Journalism," by Francis B. Hays; "Pharmaceutical Education," by W. F. Rudd; "The National Formulary," by Wilbur L. Scoville; "The Practice of Pharmacy in Retail Stores," by Robert S. Lehman; "Manufacturing Pharmacy," by A. R. L. Dohme.

It was voted to have Mr. Eddy continue as Chairman of the Committee.

A paper by Wilhelm Bodemann on "A Plea for Veteran Druggists Associations" was read, and the value of such organizations was further emphasized by Veteran members in attendance.

"Licorice Old and New," by George D. Beal and Harold T. Lacey was presented in abstract by the former. (*To be printed.*)

Edward Kremers made reference to two invoices of 1785 in stating that when Dr. Morgan returned to Philadelphia he was accompanied by an English apothecary who had brought with him a supply of medicines from S. & T. Bevan predecessors of Allen & Hanbury, Ltd. These invoices pertain to shipments made to the Marshalls and John Bartram, the early American botanist. Facsimile reproductions of both will later be published in the JOURNAL. He also referred to other contributions made to the program of the Section:

"Pharmacists and the Scientia Amabilis, No. 3, Flueckigeria *gen. nov.*," and "American Letters from Flueckiger to Tschirch."

The first session of the Section on Historical Pharmacy was then adjourned.

SECOND SESSION.

The second session of the Section on Historical Pharmacy was convened by acting Chairman Ambrose Mueller at 9:00 A.M., August 23rd. Reading of papers was proceeded with in the following order:

"The Old Drug Store of Catskill," by W. L. DuBois. (No discussion.)

"The History of the South Carolina Pharmaceutical Association," by Frank M. Smith. (Read by title.)

"The Louis Hebert Monument," by Josiah C. and Bertha L. DeG. Peacock. (Read by title.)

"History of Pharmacy—A Valuable Asset to the Pharmacist," by Otto Raubenheimer. (Presented in abstract.)

"Friedrich Wöhler and the Centenary of Synthesis," by Otto Raubenheimer. (Printed in October JOURNAL, pages 973–980.) The author received a vote of thanks.

Dr. James A. Spalding, grandson of Lyman Spalding, "Father of the U. S. Pharmacopœia" spoke on "Medicines of My Childhood." The address follows:

MEDICINES OF MY CHILDHOOD.

BY JAMES A. SPALDING.

One of the most touching events in the history of our family occurred in New York, in this very week, in the year 1820, when my grandfather placed his son Lyman, a boy of ten, between his knees and said to him, "Now, Lyman, here is the big book on medicines that you have seen me working at for two years or more, and here is some money. This book is finished at last but, like all books, it is likely to have some words badly spelt and some little grammatical errors and the Latin on the left-hand side of every page may be far from correct; so I am going to send you over to Philadelphia to ask Dr. Hewson to look over these, what we call proof sheets, and send them back to me by you. To-morrow morning you are to take the proof sheets and this money and to start from the wharf and do just what the captain tells you, or the driver of the stagecoach, until you are set down at the front door of Dr. Hewson's home in Philadelphia."

So Lyman Dyer Spalding, my father, started off the next day, and made his way by steamboat and stagecoach in one day from New York City to Bordentown; and at the end of the second day, he was set down at Dr. Hewson's front door alive—in his hands the sheets of THE PHARMA-

COPŒIA; and Dr. Hewson sent his man out with father to a boarding house nearby, kept by Mrs. Peter Cure.

He spent five days with Mrs. Cure, until Dr. Hewson had read the proof sheets and corrected them; and during that vacation, he went into the Mint and bought a new shiny quarter of a dollar, went down to the wharves to see the shipping, and to the Museum to see the curiosities and West's pictures and to a play in the theatre.

He then started off for home, but returned another way, by New Brunswick, New Jersey, the first day; and at the end of the second day, he was home with his father in New York City, once more safe and sound. It was a handsome piece of travel for a boy of only ten years.

Among other items in my father's early years, I might mention that he followed a wagon drawn by four horses, in which was a man sitting on his own coffin, for he was being hauled to the foot of Wall Street, where father and the rest of the "gang" saw him hanged at the yardarm for murder.

Father also used to peep often into the garden of Aaron Burr, which was, as I make it out, opposite to his home; and every now and then one of the braver boys, seeing Mr. Burr sitting in the shade of his trees, would shout through a knothole, "Hello, Aaron, who killed Alexander Hamilton?" and then they would scamper down the street for all they were worth.

On other occasions they would make a picnic to the Weehawken Duelling Grounds, or they would punish, with stones well flung, the scavenging pigs of Pearl Street. They have no pigs there now, it is said, but newspapers tell of "roadhogs" who are plentiful.

LYMAN SPALDING.
"Father U. S. P."

Father went to Sunday School in St. Paul's and mentioned that the street was strung with chains, up and down, to keep carriages from passing the church during the services. He also used to amuse himself by holding up to the boys outside of his father's office a skeleton which grandfather had brought from Dartmouth College, and which he would then shake into their frightened faces.

He also owned a fishing line and sinker of lead, given to him by Dr. Usher Parsons, who attended more wounded in one day of battle—sixty-eight patients to be exact—at the battle of Lake Erie under Commodore Perry, than any other Navy or Army surgeon of all times, old or new. When father went fishing with this line off Wall Street wharf, he had good luck; but when he tried to fish dry, out of a second story window of his own house, and swung the sinker too vehemently, he once or twice smashed a pane of glass, so his mother took from him sinker, line, hook and all.

Another winter, after father's adventure with Dr. Hewson, grandfather was injured on the head by a falling basket filled with rubbish. He had to resign his practice and went into the country, hoping for recovery. While there, the body of Major Andre was exhumed and grandfather and father looked in upon the affair going on. When the coffin was opened, grandfather said to his son, "Look and see how Major Andre's hair has grown since he died. His head and his face were clean shaven then, but now you see how the hair has grown quite abundantly since his death. It is a very curious thing to see and you must remember it for you may never see it again. So look at it now and be sure and remember it as long as you live."

Father looked carefully and the last time I heard him speak of it was in his eighty-second year, when he recalled it accurately as to the day and the month and year.

Grandfather then grew worse and worse and went home to Portsmouth to die, and his family were sadly bereft. Father went to school, studied navigation at that early age and went into a ship chandlery shop with a salary of fifty dollars a year. He then became so expert at navigation on land, with his instruments, that when he went to sea at the age of sixteen, he was a capable navigator. He went first as a common sailor before the mast, and you will read that expression, in our days, as a sort of reproach, as for a man of low origin, but the true sailor of those days had to go to sea first before the mast. He had to be a common sailor before he could command a ship. This was the way of living in those days in Portsmouth, and the best boys in the best families always went to sea if they were physically capable. I recall one family in which all of the five sons went to sea—three of whom became midshipmen in the United States Navy

and the other two in the merchant service. They all did well, but died early in battle or from the tumults of the sea.

Father soon became captain and in the year 1833, when he was twenty-three years old, he did two great deeds well worth recalling. Starting out from this very port of Portland, he rescued from shipwreck in mid-ocean the captain and his wife and the crew of the Brig William Rufus, eleven people all told. No sooner were they aboard his own brig, the William Osborne, than the William Rufus sank and was never more heard from. These people father took safely into port, but he had no reward, no gold watch, no money, and nothing was said about it in the papers except for a line or two; but everybody knew he had done his duty.

On another voyage he did better still, for one Wednesday afternoon, he cast the thermometer overboard into the water, told the mate to verify his readings and said, "We are nearing ice. Keep a good lookout all night long and rouse me quickly when you see anything unusual." Thursday, at two in the morning, the mate awakened him with, "Captain, I see a lighthouse," and father said, "There is no lighthouse here; that is ice with the skylight shining on it."

He rushed up on the deck as fast as he could dress himself, saw the icebergs and icefields around them and, to make a long story short, from Thursday morning, shortly after midnight until Sunday after sunrise, he navigated his vessel safely through a hundred and fifty miles of floating ice and icebergs. He thus saved his hundred and fifty passengers and his crew from being nipped in the ice and sent to the bottom of the sea. Turning in in his cabin down below after wakefulness on his part of seventy-six hours, he slept for twenty-four hours on a stretch.

Now all this long story brings us to me, and to my boyish adventures with medicines; for my father, like all sea captains, had a ship's medicine chest, and in it were enclosed all sorts of first aid remedies for sailors exposed to the perils of the sea. When we boys were growing up and had a cut or a sprain or a burn, upstairs we would run as fast as we could go, open the medicine chest and put our wounds into shape.

Among the remedies greatly in favor were Turlington's Balsam, which was a brown medicine with a base of benzoin which had the same curative effects in those days as it does to-day. Another famous remedy was Turner's Cereate, which was a yellowish, sticky remedy, easy to rub on anywhere and which contained calamine. A third was especially good for colds, coughs and croup, and that was Syrup of Squills, with a wonderful honey-vinegar taste, so that we all loved it; and you cannot even now find another medicine any better to break up a cold. The Balsam and the Cereate and the Squills have gone out of fashion, but they are still employed and remain as useful remedies in my memory.

Then there was a plaster, a yellow one, which we had to heat over the top of the stove or almost set afire with a match; and when the covering was hot, you stuck it on where it was needed, and said "Ouch!" but it soon eased the pain, but left the afflicted spot tender for a while. There was still another plaster which was made with black silk and was much affected by the ladies for "patches;" and that plaster you had as we might say to "saliviate" to make it stick. In other words we would spit on it, so as to produce the greatest effect.

The finest of all our home remedies was Balm of Gilead. Down the street beyond our house there stood a big Balm of Gilead tree under which an old Revolutionary Veteran used to sit on warm days in spring; and when the buds were beginning to fill out on that Balm of Gilead tree, we would run down and ask him if we could have some of them to make Balm of Gilead with. Then filling a pan with them—they were too sticky to put into paper—we would bring home a good sized bundle which we handed to mother, who would press them down into a wide-mouthed bottle and then fill the bottle to the top with New England rum. We had a Balm of Gilead bottle in our house for many and many a year, and when we had a bad cut and the other remedies were lacking, we would get a rag and wet it from that bottle and tie it around the injured part and then forget the cut until it had healed itself.

I must here say a word about Dr. Kittredge, Rufus by name, one of the eight well-known Dr. Kittredges of our times, successful sons of Dr. Thomas Kittredge, of Andover. I shall never forget sitting in front of a sheet-iron stove well wrapped up with blankets with my feet on a hot water jar, and Dr. Kittredge saying, "Jimmie is very sick with croup, but you give him this and Syrup of Squills and we shall find him a good deal better in the morning."

Dr. Kittridge was a character in his way, for he loved to read the Declaration of Independence publicly, on the Fourth of July, and to carry on disputations with other eloquent men

of his age in the public Forensic Club; and he was once invited to write a Fourth of July oration.

He had a great love of Graham bread, which, as you may remember, was invented by a physician who once lived in this City of Portland. Dr. Kittridge used to carry a big slice of it in his pocket and when making calls, would now and then ask for a bowl of milk and a spoon and napkin, "so that when his stomach craved support," as he said, "he was prepared." Then, placing the bowl on the parlor table and his napkin under his chin, he would gravely crumb the Graham bread into the milk and eat it. Then he would say, "It has done the job already."

Another one of our local doctors was Dr. Oliver, who attended me for a fracture of the clavicle when I rolled off a sled. He put my arm into a bandage so as to raise my collar bone; but father and mother always thought that it was a sort of put up job. A good many years later, I had an X-ray taken of the bone and found there was a callous from a fracture, just as Dr. Oliver had diagnosed.

Dr. Oliver's wife we all recalled because she was the dread of all mothers, in Portland, with marriageable sons and the fear of a good many young wives, and the belle of dances given by the Navy officers across the river at the Navy Yard.

Among the doctors I knew well, the last I will mention here, was Dr. Treadwell, who was the first to call me in to see a patient. A man, who was very proud of his elegant feet, put on a pair of tight-fitting boots to go to a ball, and coming home early in the morning, he froze his foot in the sleet which had fallen while the ball was going on. Dr. Treadwell sent for me and asked if I would give the chloroform while he operated on the frozen foot. He showed me how to give the chloroform, drop by drop, and then, during insensibility, he performed the operation. Oddly enough this man would never believe that anybody else had saved his foot but me, for seeing me start to give the chlorofrom and recalling nothing else that happened, he insisted upon it for the rest of his life that I was a great surgeon.

I wish to relate a little more about Dr. Treadwell but don't want to tire you; his career was very curious—so odd that I will say this much—after leaving his practice he went to Arabia to learn Arabic and how to make coffee in the sandy desert; from thence he came to Greece where he learned to speak Greek, and, finally, to Italy, where, after much study of that language, he settled in Bologna. His idea was that under the corridors of that city you could be free from the sun and you would not get wet when it rained. There were no earthquakes in the town, because if there had been the leaning towers would long since have toppled over. Last of all, the Italians were very courteous, never spitting on the sidewalks, never going around with their hands in their pockets.

In that city, Dr. Treadwell taught English for years and was very successful; but he had a great deal of trouble in getting his letters at the Post Office, for his name, which I have not yet given in full, was Dr. Robert O. Treadwell. Inquiring at the Post Office for his mail, he could not find his letters for a long time, until finally he had the bright idea of hunting for them in the section devoted to the letter "O," (under such names as "O'Toole" and "O'Brien"), and there he did find his letters as "O'Treadwell." He dropped the "O" and became Treadwell, but even then he could not easily get his mail under the letter "T" because they divided it into three syllables "Tre-ad-well." In sheer desperation he changed his name to "Odione" which was just elongated from Odion which had long been his middle name.

After thirty years abroad, he came home to Portsmouth to die in his ninety-second year.

Some of these days I am going to write him up in full as one of the curiosities, not only of Portsmouth but of the entire American medical profession.

Well, Brothers in Medicine, I could tell a good deal more about medicines that grandfather used and father used and I, myself used in my long practice, but others are waiting to say their little pieces and I will close in this fashion.

Medicines we shall always have with us. When you or I can see a drop of a solution of atropine dilate the pupil of an eye or a drop of eserine contract the pupil of an eye, or cocaine in proper solution deaden the most sensitive eye so that a cinder may be removed from it without a patient feeling it at all, or needles can be inserted in passing a suture through its coverings, or a delicate knife in making an incision can be pushed into the very eyeball itself, without the patient feeling it—then I know that medicines do have a beneficial effect on the human tissues. If we have learned about these medicines in our times, so, too, through experiments, other medicines may be found to exert their benefits for the human race, and we thus see that the field of

usefulness of medicines constantly widens. Such things, being our knowledge and our fixed and firm belief—as fixed and firm as anything human can be—it is for you gentlemen, as pharmacists, and as compounders of medicines and manufacturers of synthetic compounds, to see to it that the medicines prescribed and utilized by physicians for humanity shall be efficiently prepared, well compounded, and trustworthy to the highest degree as to dosage.

If you live long enough, you will see a great many of the remedies of my day, as well as many that my father and grandfather used before me, go out of daily use; and you will see, too, the medicines of your own day pass along; but the basic idea that medicines, in some way or another, will continue to endure forever, is as fixed and firm as the land on which we live, and in which we have our being.

A vote of thanks was given the speaker.

Presentation of papers continued:

"Drug Clerks a Hundred Years Ago," by F. B. Kilmer.

"A Brief History of the First Twenty Years of the Montana State Pharmacy School," by Charles E. Mollett.

"Résumé of the Early History of Missouri Pharmaceutical Association," by Ambrose Mueller.

"Parke, Davis & Co.," Historical sketch, by J. U. Lloyd.

"The Activities of F. Arthur Beckett in Educational Pharmacy," by Frank T. Green.

The Committee on Nominations reported the names of the nominees of the Section for the ensuing year. The report was accepted and in due order the nominees were elected as follows: *Chairman*, Lyman F. Kebler, Washington, D. C.; *Secretary*, George D. Beal, Pittsburgh, Pa.; *Delegates to the House of Delegates*, Ambrose Mueller, Webster Grove, Mo.

The final session of the Section on Historical Pharmacy was then adjourned.

CENTENARY OF MANCHESTER PHARMACEUTICAL ASSOCIATION.

The centenary celebration of Manchester Pharmaceutical Association included a dinner, on October 10th, at the Midland Hotel. The guests were received by President and Mrs. William Kirkby; among them were the Lord Mayor of Manchester, the Vice-Chancellor of the University and men prominent in British pharmaceutical affairs.

The Lord Mayor, in congratulating President Kirkby and the Association, commended the objects of the organization—the advancement of pharmacy, the protection of legitimate trade interests and the promotion of fellowship; in motives, the members are actuated by a sense of responsibility, and seek only the public good. "The protection of legitimate trade interests," he said, "was entirely good, for all trades and professions have privileges, and they must unite to protect these, not only for their own sakes, *but for the good of the community.*"

Mr. Kirkby is an honorary member of the AMERICAN PHARMACEUTICAL ASSOCIATION; a sketch of him will be found in the JOURNAL for January 1923. He is a former president of the British Pharmaceutical Conference, was president of Manchester Pharmaceutical Association in 1917 and is again in this, its centenary year.

DRUGGISTS THREATENED, ARREST MADE AT MARFA.

An investigation by the Attorney-General's Department of Texas, resulted in the arrest of John Thompson, alias Bernard B. Shaw, at Marfa, Tex., on a charge of using the mails to defraud in connection with an alleged extortion scheme practiced on small town druggists of Texas through threats of state prosecution under the assumed name "law."

State Ranger M. T. Gonzaulles, acting with postal authorities, arrested Thompson, who waived preliminary hearing and who on failure to make $5000 bond was placed in jail at El Paso. The Attorney-General's Department said demands for money have been mailed out of Austin for some time to druggists in small towns, evidently doing business under names other than their own. The letters were written on stationery apparently designed to convey the impression that they came from a state department.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and Branches shall become the property of the Association with the understanding that they are not to be published in any other publication prior to their publication in those of the Association, except with the consent of the Council." —Part of Chapter VI, Article VI of the By-Laws.

ARTICLE III of Chapter VII reads: "The objects and aims of local branches of this Association shall be the same as set forth in ARTICLE I of the Constitution of this body, *and the acts of local branches shall in no way commit or bind this Association, and can only serve as recommendations to it.* And no local branch shall enact any article of Constitution or By-Law to conflict with the Constitution or By-Laws of this Association."

ARTICLE IV of Chapter VII reads: "Each local branch having not less than 50 dues-paid members of the Association, holding not less than six meetings annually with an attendance of not less than 9 members at each meeting, and the proceedings of which shall have been submitted to the JOURNAL for publication, may elect one representative to the House of Delegates."

Reports of the meetings of the Local Branches shall be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly and manuscript should be signed by the reporter.

BALTIMORE.

The first meeting of the Baltimore Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION for 1928–29 was held at the Emerson Hotel on October 26, 1928.

Secretary E. F. Kelly outlined the proceedings of the various conventions of the State Pharmaceutical Associations in the far West which he had the pleasure of attending last summer. He also summarized the principal proceedings of the AMERICAN PHARMACEUTICAL Convention in Portland, Maine, and of the N. A. R. D. Convention in San Francisco, Cal.

In comparing the problems of the pharmacists of the far West with those of the East, Secretary Kelly stated that there were four conditions which were mainly responsible for the differences in perspective of the Western and Eastern pharmacists; namely, the West does not have to consider emigration questions, and therefore, has no particular problem concerning those who enter the practice of pharmacy; the State Associations are not as well supported in the West as in the East; there is a lack of information and contact on national pharmaceutical questions in the far West; and also difficulty with law enforcement, as efficient machinery has not as yet been provided for this purpose.

In discussing the Convention of the A. PH. A. in Portland, Secretary Kelly emphasized the effort made to secure better pharmaceutical service in the U. S. Army, stating that it is in general unsatisfactory for the U. S. Government to operate pharmacies under conditions which would not be authorized by the state.

He complimented the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, and the AMERICAN PHARMACEUTICAL ASSOCIATION upon the adoption of the four-year course as a minimum for pharmaceutical training, to go into effect not later than 1932.

He told of the interest of the Boards and of the Schools in a complete survey of pharmacy, and the outlook for the adoption of definite standards which would naturally follow such a survey.

Secretary Kelly discussed the formula disclosure question, especially the advisability of having the labels of medicinal preparations show some statement as to their medicinal potency, pointing out that the pharmacist has a right to know what he is selling, and the user a right to know what he is buying. However, as this movement would likely require a revision of the National Food and Drugs Act, it was deemed undesirable to sponsor such legislation at the present time.

Special mention was made of the approval of the Capper-Kelly Bill by the AMERICAN PHARMACEUTICAL ASSOCIATION, this approval including not only the bill, but also the general principle of price protection.

He also discussed the proposition of interesting students in becoming members of the A. PH. A. and establishing Student Branches of the A. PH. A., part of the dues to be remitted to the Branches for general expenses.

In discussing the proceedings of the N. A. R. D. Convention, mention was made of the attendance of Congressman Kelly at the meeting, and of his speaking not only before the pharmacists, but also before the jewelers, grocerymen, hardware dealers, etc., of San Francisco.

Secretary Kelly stated that at the N. A. R. D. Convention appeals were made to the retail pharmacists to enter politics, not only from the standpoint of a retail pharmacist, but also from the standpoint of a citizen. He stated it was urged that pharmacists are the logical persons to assist in carrying out the regulations of laws pertaining to pharmacy, and are especially fitted for such positions as prohibition and narcotic agents.

Concerning general conditions, he stated it was conceded that pharmacists must make the pharmaceutical part of their business more prominent to the public, and show that the requirements surroundng the practice of the profession are really a protection to the public rather than a restriction.

Secretary Kelly expressed pleasure in having the opportunity of travelling through the West, and of attending the State and National Conventions.

B. OLIVE COLE,
Secretary-Treasurer.

CHICAGO.

The 176th meeting of the Chicago Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held Tuesday, October 16th, at the University of Illinois School of Pharmacy, with a very good attendance.

The meeting was called to order by President Gathercoal, who introduced the speaker of the evening, Dr. Bernard Fantus, of Chicago.

Dr. Fantus spoke on Roentgenographic Media. He pointed out first the variation in absorptive power of different elements to X-rays, which vary directly with their position in the periodic system. The opaqueness of the elements increases rapidly as we descend the scale. Tissues, which are translucent are composed of C O N and H. Calcium and phosphorous in bones are forty times more opaque than oxygen. Opaqueness also varies with the specific gravity.

By means of X-ray films the absorptive power of various tissue was shown and the contrast due to air cavities. Air has been used as an X-ray media by injecting oxygen into the peritoneum, intestine or brain.

Bismuth has the highest absorptive power but is too toxic. Barium sulphate is the best media for X-rays of the alimentary tract to detect adhesions, obstructions, ulcers, fistulas and sinuses. Barium sulphate, usually 20%, should be mixed with some colloidal, suspending material. Malted milk and hot cocoa were suggested as possibly the best way to administer barium. Barium sulphate and cocoa butter combined with 20% xeroform made in the form of bougies was recommended for the X-ray of fistulas. Dr. Fantus pointed out the opportunity for the pharmacist to prepare some suitable preparations for the administration of barium sulphate.

Sodium iodide in 10% solution is used to X-ray the bladder or kidney, while a 25% solution of sodium bromide is necessary for the same purpose. The bromide is less active and less poisonous. Bromine and iodine in oil is used as an X-ray media in gynecological examinations by injections into the uterus, in examination of lungs and bronchi by injection into the trachea and for examination of the spinal canal. A brominated oil containing 33% bromine may be used.

To be able to visualize the gall bladder, a substance was necessary which would be readily dissolved in fat and by the bile and tetraiodophthalein has been found satisfactory. Due to irritant properties it must not dissolve in the stomach, so that it is administered intravenously or in enteric-coated capsules. Intravenous use is somewhat more dangerous while the capsules have not proved entirely satisfactory because of imperfect enteric coating or incomplete solution in the intestinal tract.

Dr. Fantus offered, as a substitute, a colloidal solution of tetraiodophthalein, which can be taken by mouth. A one per cent solution is prepared by dissolving the dye in seltzer water. The above solution does not keep well and offers an opportunity again for the pharmacist to perfect this preparation.

After a general discussion Dr. Fantus was given a rising vote of thanks and the meeting adjourned.

S. W. Morrison, *Secretary-Treasurer.*

PHILADELPHIA.

The October meeting of the Philadelphia Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION was held Tuesday evening, October 9th, at the P. A. R. D. building, President Nichols presiding.

The meeting followed the regular dinner

which was held earlier in the evening at the Touraine Apartments Restaurant. On motion, the reading of the minutes of the May meeting was dispensed with, and the Secretary announced the names of the following applicants for membership in the parent body:

W. C. Nichols, Sam Ominsky, D. C. Pitcher, Morris Cohen, R. K. Fees, J. S. Perloff, H. R. Boggs, M. H. Kaliner, H. E. Lupus, H. G. Cornfeld.

These were accepted for Branch membership, pending the action of the parent body.

Charles H. LaWall then brought up the subject of Student Branches of the A. PH. A. as recommended by President Johnson of Seattle. He said that he was favorably inclined toward this idea and that it would be the duty of the Local Branch to guide the Student Branch and to let it amplify the work of the AMERICAN PHARMACEUTICAL ASSOCIATION. It was suggested by Mr. Hunsberger, after a discussion, that two or three men be appointed to look into the workings of the already-existing Student Branches. It was decided to refer this matter to the Executive Committee of the Branch.

In calling attention to the program of future meetings this year, President Nichols particularly emphasized the Mock Trial to be held at the November meeting, details of which will be given later.

The Secretary was instructed to write to Otto Kraus, who is ill, and to convey the goodwill and sincere wishes of the Branch for his speedy recovery.

On motion by Mr. Harrisson, the Branch went on record as supporting the efforts of the State Medical Association in combating the menace of uneducated "doctors," and the Secretary was instructed to obtain a copy of the petition and to have it signed by the officers of the Branch in the name of the Branch.

The speakers of the evening were next called upon. Dr. LaWall gave a talk on the "Labeling of Olive Oil and Its Substitutes." Some practices that we thought stamped out long ago with the introduction of the Pure Food laws have apparently been revived. Quite a number of cases were successfully prosecuted in Pennsylvania last year in which cotton-seed oil was substituted for olive oil. Cotton-seed oil is used as a substitute for other oils. Certain cans, principally containing cotton-seed oil, are misleading to the purchaser inasmuch as they have a foreign appearance—olive branches often being on the label, printed in a foreign language. Why should cotton-seed oil bear an Italian label? Dr. LaWall illustrated his talk by a number of specimen cans.

J. W. E. Harrisson, the other speaker of the evening, spoke on "Do You See U. S. P. Preparations?" He had visited more than one per cent of the drug stores in Philadelphia and obtained samples of chloroform liniment, aromatic spirit of ammonia, sweet spirit of nitre and solution of magnesium citrate. In the case of chloroform liniment, most of the samples were up to the standard in chloroform content but low in camphor. Very few of the samples of sweet spirit of nitre passed the standards of the U. S. P. X. Only one concern used an amber bottle which is required by the U. S. P. for spirit of ethyl nitrite. Only one sample of the solution of magnesium citrate met the U. S. P. tests.

Animated discussions followed both talks.

MARIN S. DUNN, *Secretary.*

NORTHWESTERN

A meeting of the Northwestern Branch of the A. PH. A. was held jointly with the Wulling Club of the College of Pharmacy of the University of Minnesota, in the auditorium of the College, on Thursday, November 1, 1928. President Almin of the Northwestern Branch presided. Dean Wulling and Chairman Laska of the Wulling Club each made a few remarks pertinent to the present meeting and future meetings of these two bodies. President Almin then introduced H. C. Kruckeberg, the guest speaker of the meeting.

Mr. Kruckeberg, in the course of his talk, decried the use by "lunch counters" of the name "Drug Store," with the prestige attached thereto. He termed the well-operated drug store "Health Insurance for the community" and closed his talk with reminiscences of his contacts with many nationally known "Professional" pharmacists.

C. V. NETZ, *Secretary-Treasurer.*

HENRY ELLIOTT HOLMES.

We are advised of the death, October 26th, of H. E. Holmes, President of Stewart & Holmes Drug Co., Seattle, Wash. Further reference to the deceased will appear in December JOURNAL.

Mr. Holmes became a member of the ASSOCIATION in 1880, and has ever been interested in its progress and that of pharmacy.

COMMITTEE REPORTS

REPORT OF AMERICAN PHARMACEUTICAL ASSOCIATION COMMITTEE ON U. S. PHARMACOPŒIA (1928).*

BY LYMAN F. KEBLER, CHAIRMAN.

There seems to be a dearth of suggestions available among the members of this committee. It may in part be due to the fact that a goodly number are members of the Committee of Revision and for that reason do not consider it prudent to discuss the various problems that might come to mind, outside of the committee activities.

As the result of a circular letter sent to the various members of the committee, the chairman has received a number of suggestions, however, believed of sufficient importance to incorporate into a report. William Mittelbach feels that there is something inherently wrong somewhere because of the fact that the Pharmacopœia, the most complete textbook on the subject in the world, is but seldom referred to in a majority of the drug stores. Mr. Mittelbach is a veteran and has been exceedingly active during his long connection with the drug business. He considers it very unfortunate that conditions at present obtaining crowd out the Pharmacopœia. He feels that the younger generation is not given sufficient opportunity to make original investigations but is compelled to devote its apprenticeship to matters far remote from real pharmacy.

PHARMACOPŒIA SHOULD INCLUDE MORE DRUGS.

Dr. H. H. Rusby has written rather extensively on plant drugs in the Pharmacopœia. He believes in the inclusion in the Pharmacopœia of a much larger number of drugs in common use, if for no other purpose than to provide adequate standards of purity. In this connection he writes:

> "Nevertheless, I still hold that the pharmacists' rights in the Pharmacopœia are infringed by denying them U. S. P. standards for drugs in common use, and I claim that quite a number of drugs (which are named in my publication) should be reinstated in the Pharmacopœia."

In his writings he expressed the view that the founders of the Pharmacopœia did not intend that the usefulness of a drug should be taken into consideration in deciding upon its admission. In this connection he now believes himself in error and writes:

> "* * * I must modify my statement that the founders of the Pharmacopœia did not intend that usefulness of a drug should be taken into consideration in deciding on its admission. It is evident they did intend this factor to be considered."

The Doctor has a distinct aversion to the word "proved" as constituting a basis for admission. On this point he writes:

> "I also object strenuously to the word "proved" as constituting the ground for admission, as it can be used to exclude drugs which have not been investigated which would be found acceptable if they were investigated. I think the word "probable" should be substituted, probability, added to extensive use being a sufficient ground for acceptance."

LITIGATION AND THE ERGOT PROBLEM.

During the past year the subject of ergot has claimed considerable attention at the hands of the Doctor. He feels that the Department of Agriculture, by not stringently administering the food and drugs act was admitting ergot into this country which is prejudicial to the health of our citizens. He has taken the Department rather sharply to task on several occasions. A litigation was started by an importer and is still pending in the District of Columbia against the Secretary of Agriculture, endeavoring to enjoin the Secretary from admitting certain kinds of ergot into this country held to be in violation of the food and drugs act. In connection therewith, Dr. Rusby filed an affidavit in behalf of what he considers a standard kind of ergot as against ergot that he considers inferior; ergot which does not comply with the Pharmacopœial standard, provided for in the body of the text under Ergot.

* Presented at Portland, Me., A. PH. A. meeting, 1928.

Another point raised from time to time is contained on page 4, General Notices, under the heading of "Vegetable Drugs" and reads in part; "They are to be free from mouldiness, show no discoloration, abnormal odor, sliminess or deterioration due to any cause." The contention is, that that requirement excludes all mouldiness, discoloration and deterioration in every container, bale, package or what not in every shipment. The question naturally arises, is such a strict interpretation to be placed on this clause, or shall the enforcing officers be allowed to use some judgment and discretion. Permit me to say, that if the first construction is to obtain, the difficulties of importing or shipping crude drugs into interstate commerce will be considerably increased. It seldom happens that a shipment of such drugs is entirely free from the abnormalities referred to above. Is it practical? Let us hear from the trade and the committee of revision. In connection with a standard in Pharmacopœia VIII, a large importer wrote regarding a detention made on the findings of a leading authority:

> "To go into the foreign markets to secure an article of Digitalis of which we import many tons each year, with an effort to get only goods which are collected from plants of the second year's growth at the commencement of flowering, may be aptly compared to securing the left hind leg of a rabbit, killed by the light of the moon, in a grave-yard by a cross-eyed negro."

The biological test has stepped in and settled this issue.
On the subject of Ergot, Dr. Rusby has the following additional information to offer:

> "On the subject of ergot, I now have something definite to submit. It is now conclusively proved that an ergot that has not suffered damage, resulting in the reduction of its activity, is at least twice as active as required by the present cockscomb test of the Pharmacopœia. It has been clearly shown that the standard fluidextract on which that test is based was made from ergot a part of which has suffered much damage. I urge most strongly that this standard be changed so that only 0.3 cc. of the fluidextract shall be required to darken the cockscomb."
>
> "I also assert the strong probability that two samples which agree in their strength as determined by the cockscomb test, may differ widely in their oxytocic activity, and I advise the most thorough investigation to determine whether there should be separate tests to establish these two kinds of activity."

Your chairman is not prepared to believe that the standard fluidextract on which the test is based was made from ergot a part of which had suffered much damage. Such a condition would certainly reflect seriously on some one. The question of ergot apparently requires more study.

Dr. E. N. Gathercoal believes that the report of the committee should cover the activities of the sub-committee on Botany and Pharmacognosy, and possibly the investigations under the direction of Chairman Cook. Your chairman does not believe that this comes within the province of our committee but constitutes a part and parcel of the report of Chairman E. Fullerton Cook.

CHANGING OINTMENT NAMES AND FORMULAS.

W. Bruce Philip writes:

> "Our members believe it inadvisable to change the base of ointments—as, from yellow vaseline to white, or *vice versa*, whereby confusion is bound to arise and the possible benefit from the change seems questionable, especially where Pharmacopœias have seemed to alternate with each edition on changing the basis of certain preparations."

The subject of ointments in the U. S. P. X, has received considerable adverse criticism. It seems that only two of the ointments appearing in the U. S. P. IX have found their way into U. S. P. X without change of either composition or title. Such numerous changes must present many difficulties. It would hardly seem probable that changes in composition have been made solely on the basis of certain fatty substances being more readily absorbed than others. If this was a deciding factor it must be said that this whole field is still very much in the realm of opinion and undue changes in formula should not be made on such a basis. A number of years ago sheep

wool fat was supposed to be supreme, now we are not so certain. These changes present problems not only for the physician who uses ointments in his practice, the druggist and the consuming public, but also difficulties in connection with the enforcement of the Federal and State food and drug laws.

NOMENCLATURE AN IMPORTANT MATTER.

The question of nomenclature is an important matter. The changing of names or titles is always liable to introduce confusion. This is particularly true in the case of drugs. For example, hexamethylene tetramine became known to the medical and pharmaceutical world under the proprietary title of urotropine. The British Pharmacopœia in 1914 recognized it under the title hexamine, the U. S. P. IX, called it hexamethylenamine and the U. S. P. X revision names it methenamine. This all makes for confusion. Fortunately, the drug is not a virulent poison. Otherwise serious results might follow through misunderstandings in the writing and compounding of prescriptions. The point your chairman desires to emphasize is that there should be as few synonyms as possible of a given drug in any given language. The same drug should be known the world over under the same name in the English speaking and writing world. Changes in name should be resorted to only as an extreme necessity.

While discussing nomenclature your chairman desires to call attention to the phrase "Olive Oil Castile Soap," in U. S. P. X, used as a synonym for a soap made from olive oil and sodium hydroxide. It is the old, old method of making castile soap. This synonym injects a new element of confusion. By inference it means that there are other kinds of castile soaps. For example, cotton-seed oil castile soap, palm-olive castile soap, palm-cocoa castile soap, etc. Some manufacturers claim that a better soap can be made with oils and fats other than olive oil. If this is correct why, in the name of good business, handicap a superior soap with a name that is hoary with age and represents something inferior? The Federal Trade Commission has had the castile soap controversy under consideration for several years. Thousands of dollars have been spent by both the Government and the trade. One manufacturer compiled a most extensive bibliography on the subject. The vast majority of the references define castile soap as a soap made only with olive oil. An attempt was made by manufacturers at a hearing to have the question of castile soap settled on the basis of the information contained in the U. S. Pharmacopœia X. It presented a unique problem. It allowed for scores of different castile soaps. An early decision is awaited with interest.

STANDARDS AND MISBRANDING.

A member of this organization testified to the effect that if only 5% of olive oil were used in the manufacture of a soap, such a soap could properly be called castile soap. This position does violence to long established principles obtaining in the enforcement of Federal and State food and drug laws. Examples: Food Inspection Decision 75, 1907, "The terms 'maple sugar' and 'maple sirup' may only be used on the label as part of the name when those substances are present in substantial quantities as ingredients. They should not appear on the label as part of the name when only a small quantity of those substances is used to give a maple flavor to the product." Food Inspection Decision 63, 1907, "It is held that if a mixture of drugs is named after one or more but not all of the active medicinal constituents (not vehicle) present in a preparation, the word 'compound' can be used in connection with the name, (*a*) provided the active constituent after which the product is named is present in an amount at least equal to that of any other active medicinal agent present. Or (*b*) provided the potent active constituent after which the product is named is present in sufficient amount to impart the preponderating medicinal effect. Example: If a product is named after the active constituent, strychnine, the strychnine or one of its salts should be present in sufficient amount to produce the preponderating medicinal effect of the preparation." The present official Pharmacopœia recognizes at least two products that transgress these decisions, *viz.*, "Compound Pills of Mild Mercurious Chloride," and "Compound Licorice Powder." The National Formulary V contains several more. As an example, attention is called to "Compound Syrup of Figs." The active agents in this syrup are senna and cascara. The fig extract simply adds agreeableness. Reference is made to the National Formulary here because both publications are legal standards, are intimately interwoven and for the reason that a member of our committee introduces it later.

Preparations having names in conflict with the above decisions are considered misbranded

under the National Food and Drugs Act. If the legal standards themselves contain products that are misbranded under these decisions, what effect will they have in the enforcement of the act? Your chairman believes that this paradoxical condition should be rectified as soon as practical. The standards should lead the way. They should not handicap the work.

MODIFY U. S. P. AND N. F. PREPARATIONS CLASSED AS ALCOHOLIC BEVERAGES.

Mr. Philip believes that Pharmacopœial and National Formulary preparations now classed as beverages by the Government, should be sufficiently medicated with as little change in the proportion of the ingredients as possible so as to eliminate the necessity of accounting for same by annoying bookkeeping and endless details. Among the preparations included in the list may be mentioned:

U. S. P. **Elixir Aromaticum** (Elixir Aromatic).
N. F. **Elixir Anisi** (Elixir of Anise).
N. F. **Elixir Aromaticum Rubrum** (Red Aromatic Elixir).
N. F. **Elixir Aurantii Amari** (Elixir of Bitter Orange).
N. F. **Elixir Cardamomi Compositum** (Compound Elixir of Cardamon).
U. S. P. **Elixir Glycyrrhizæ** (Elixir of Licorice).
N. F. **Elixir Taraxaci Compositum** (Compound Elixir Taraxacum).
N. F. **Elixir Terpini Hydratis** (Elixir of Terpin Hydrate).
N. F. **Spiritus Aetheris Compositus** (Compound Spirit of Ether or Hoffmann's Anodyne).
N. F. **Spiritus Myrciæ Compositus** (Compound Spirits of Myrcia).
N. F. **Tincture Amara** (Bitter Tincture).
N. F. **Tincture Aromatica** (Aromatic Tincture).
U. S. P. **Tinctura Aurantii Dulcis** (Tincture Sweet Orange Peel).
U. S. P. **Tinctura Zingiberis** (Tincture of Ginger).

Your chairman is thoroughly in sympathy with this idea but does not believe it practical in some cases. Everything possible should be done to lessen the burden of both the druggists and prohibition enforcing officers.

SUBSTANDARD DRUGS MAKE FOR TROUBLE.

In connection with the use of a so-called non-alcoholic simple elixir Mr. Philip writes:

> "Members are violating the Pure Food and Drug Law by using, without referring to the physician, a non-alcoholic simple elixir. The pharmaceutical houses are in part to blame; for they have, through their representatives, sold this product and by telling the druggist that everybody is doing it, have unintentionally caused this condition. A doctor in prescribing simple elixir does not know what he will receive—from one store an alcoholic preparation, in the next store a non-alcoholic preparation."

This brings up the knotty and often aggravating problems of the so-called substandard U. S. Pharmacopœia and National Formulary drugs, provided for under the Federal and various State laws. These laws, in short, provide standards, then promptly knock them down. Your chairman has always believed that this proviso works to the disadvantage of physicians and the sick and is liable to get the trade into trouble. It has made trouble for some. He has used his best efforts to have it eliminated without success. The justification of this proviso has often been made that it enables a manufacturer to put a superior product on the market without violating the law. There may be a few such cases but on the whole it makes for substandard drugs and ultimate trouble for some one.

In order to meet conditions obtaining the Bureau of Chemistry in 1916 issued the following Service and Regulatory Announcement:

> "180. *Labeling of U. S. P. or N. F. Articles Not Conforming to Standard.* With reference to the labeling of drugs recognized in the United States Pharmacopœia or National Formulary but which do not conform to the standard of strength, quality or purity, as determined by the tests laid down therein, in the opinion of the bureau, the label should bear either a statement to the effect that the drug is not a United States Pharmacopœia or National Formulary article, together with a state-

ment showing its own actual strength, quality or purity, or a clear and exact statement of the nature and extent of the deviation from the standard of strength, quality or purity set out for the article in the United States Pharmacopœia or National Formulary."

Mr. Philip seems to feel that the Pharmacopœia is too often modified by the mere whim or caprice of some person who desires to inject his personal opinion into the book in order to make it look a bit different. He thinks that our aim should be a correction of errors rather than a correction of the formulas.

U. S. P. BOOK OF STANDARDS THAT MAKE FOR GREATER THERAPEUTIC USEFULNESS.

The U. S. Pharmacopœia is primarily a book of standards but standards that make for greater therapeutic usefulness and efficiency. If it were not so why spend all of the time, energy, money and effort in its get up. The inclusion of certain drugs of little or no recognized medicinal value, at the present time, often causes material embarrassment in the enforcement of certain Federal laws. The deletion of certain drugs in the last revision brought material relief. It is believed that several more could be omitted with advantage.

In some of the work with which your chairman is connected, it is quite common to meet with ingredients in various products for which most unreasonable medicinal claims are made. When it is pointed out that certain drugs have little real medicinal value, reference is made to the fact that they are now or have been included in the U. S. Pharmacopœias or National Formularies, recognized standards under the Food and Drugs Act. This, of course, at times presents added barriers to overcome. One must admit that if a drug is accepted for inclusion in either of these publications, it should have sufficient merit medicinally to justify its recognition. If it is desired to include a drug of doubtful or no recognized medicinal value, at the present time, just for the purpose of providing a standard of purity, it would seem desirable to add a statement to the effect that it possesses little if any recognized or known medicinal value at the present time. Several publications have adopted this practice and it is proving very useful.

CHARLES NICOLLE AWARDED NOBEL PRIZE.

The recipient of the Nobel Prize in medicine and physiology for 1928, is Charles Nicolle, French bacteriologist. He is best known as discoverer, in 1912, that typhus is conveyed by inoculation, by lice, fleas, etc., from a patient to healthy persons. Dr. Nicolle was awarded the Osiris prize of 100,000 francs for the same discovery, which is said to have saved a million lives during the World War.

The recipient has been for twenty-five years chief of the Pasteur Institute in Tunis, and during the greater number of these years he carried on the work, which led to the discovery, and because of this the decision of the medical faculty of Karolina Institute came as somewhat of a surprise, as the prizes have heretofore been awarded for contemporary discoveries; the momentous value of the discovery is not questioned and the award is rightly bestowed.

BENZOYL-MORPHINE RESTRICTED.

The United States is among 12 nations which have adopted the plan of the League of Nations for the control of benzoyl-morphine, according to an announcement by the League of Nations which has been received at the Department of State.

The Geneva and Hague Opium Conventions provided for the control of products which in the light of subsequent scientific investigations may prove to be susceptible to abuse, as are morphine and cocaine.

In December 1927, the League Council in the recommendation of the Health Committee (which had previously consulted the Public International Health Office), asked the Governments to bring eucodal and dicodide within the provisions of the Geneva Opium Convention, since, in the opinion of the Health Committee, they were habit-forming drugs liable to be abused in ways similar to the abuse of morphine or cocaine.

In June 1928, the Council of the League, on the recommendation of the Opium Commission, further decided to make a similar recommendation to all the States, signatories of the Geneva Convention, as well as to all States, parties to the Hague Opium Convention, concerning benzoyl-morphine which is another derivative of morphine.

INTERNATIONAL PHARMACEUTICAL FEDERATION.

Brief mention is made of some of the transactions of the International Pharmaceutical Federation in the August JOURNAL, page 815.

It was decided not to include preparations of potent drugs in the International Formulary as these properly belong in the contemplated International Pharmacopœia.

Further information is to be set relative to the standard moisture content of powdered digitalis for which the content had been fixed at a maximum of 3%.

The standardization of less potent drugs is a subject of further study. Professor Wasicky gave as an example Ceylon cinnamon of which quite a number of varieties are known in commerce varying in price and properties. The standardization of such drugs might be determined by organoleptical examination, gum content and that of bitter content. A commission consisting of Professors Wasicky, de Graff and Herrisey was appointed to study the subject and to devise methods of examination which could be carried out by pharmacists. The latter submitted notes on the action of certain heterosides (glucosides) which by their decomposition cause blackening of dry plant tissues. Special reference was made to ambroside and asperuloside.

Messrs. Collard and Linstead made a number of suggestions for a standard pharmacy law. In pharmacy laws the public health should be the first consideration. On the continent of Europe university training is compulsory and this training is better organized than that at the schools of pharmacy. Professors at the University enjoy a higher status than that held by teachers in schools and they would object to changes in other positions. From the students' point of view it is desirable that they should follow the same courses as other students in science so as to receive a good grounding in general science. It was accepted by the meeting that there should be a central control of the practice of pharmacy and that inspectors should be pharmacists and that it would be advisable to have special tribunals to deal with legal questions consisting of lawyers and pharmacists and such tribunals should have disciplinary power. The point was quite generally held by the members that no special assistant's examination was necessary but that a certificate of competency for the duties of an assistant to a pharmacist in a laboratory should be issued. It was accepted as an axiom that only qualified chemists should own pharmacies, and further, association for business purposes with unqualified persons should be prohibited. Permission should be given to medical practitioners to dispense medicines only when there was no pharmacist in the neighborhood. Only pharmacists should be allowed to dispense medical prescriptions and sell drugs, though an exception could be made in the case of poisons and other substances required for agricultural or domestic use. The manufacture of pharmaceutical specialties should only be carried on under the control of a responsible pharmacist.

The report submitted by Messrs. Swicker, Heuberger, Stich, Martin and Madsen recommended the universal acceptance of names of proprietary chemicals included in the United States, British and Dutch pharmacopœias, such as barbital, glusidum, etc. The Commission pointed out that short names are more convenient for use by physicians in every-day practice than are long scientific names. A further discussion of the subject is to be made at the next meeting of the Federation. The same action was taken on the international control of pharmaceutical specialties, following the report submitted by Dr. Risin. So many preparations are being put out by manufacturing houses that it is necessary to have close coöperation of pharmacists and manufacturers. Pharmacists are responsible for what they sell and therefore the composition of these preparations should be indicated on the label. It was further decided that the subject be taken up internationally by having the several countries nominate members to a commission for the discussion of the question and to make suggestions for a uniform method of control.

The Dutch Pharmacopœial Society proposed the appointment of a Commission to investigate the various conditions affecting the supply of medicines, etc., for shipments. The Federation acted favorably on the proposition and appointed Messrs. Van Itallie, H. N. Linstead and M. Vavasseur, as members of the Commission.

The influence of trade on the practice of pharmacy was discussed and this question also was carried over to the next meeting for further consideration.

Stockholm was selected for the next place of meeting, in 1930.

EDITORIAL NOTES

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Members of the Council, A. PH. A.: S. L. HILTON, *Chairman;* CHARLES H. LAWALL, *Vice-Chairman;* E. F. KELLY, *Secretary;* H. V. ARNY, A. G. DUMEZ, H. A. B. DUNNING, H. C. CHRISTENSEN, J. A. KOCH, J. H. BEAL, W. B. DAY, T. J. BRADLEY. *Ex-Officio Members:* D. F. JONES, *President;* A. W. PAULEY, W. H. ZEIGLER, *Vice-Presidents;* C. W. HOLTON, *Treasurer,* E. G. EBERLE, *Editor of the Journal;* A. G. DUMEZ, *Editor of the Year Book;* AMBROSE HUNSBERGER, *Chairman of the House of Delegates.*

Collaborators: The Members of the Council; E. FULLERTON COOK, *Chairman,* U. S. P. Revision Committee; W. L. SCOVILLE, *Chairman,* N. F. Revision Committee; the Chairmen of the Sections, A. PH. A.; J. C. MUNCH, A. L. I. WINNE, P. H. DIRSTINE, R. B. ROTHROCK, LYMAN F. KEBLER; A. G. DUMEZ, *President,* A. A. C. P.; CHARLES B. JORDAN, *Chairman,* Executive Committee, A. A. C. P.; H. M. LEROU, *President,* N. A. B. P.; HENRY C. CHRISTENSEN, *Secretary,* N. A. B. P.

THEODORE J. BRADLEY RETIRES AS CHAIRMAN OF SYLLABUS COMMITTEE.

Because of the pressure of his present executive duties, Dean Theodore J. Bradley, of Boston, Mass., is compelled to relinquish the Chairmanship of the Pharmaceutical Syllabus Committee.

THEODORE J. BRADLEY.

Dean Willis G. Gregory, of Buffalo, N. Y., was Chairman of the Committee during the preparation of the first and second editions of the Syllabus, on which a large part of the work was done by Dr. Henry L. Taylor, of Albany, N. Y. Dean Bradley was elected Chairman in 1917 and the third edition was prepared and distributed while he has been chairman. Each edition has shown a marked improvement over the preceding edition, making the book more and more helpful to the colleges and boards of pharmacy.

Considerable preliminary work for the revision has been done under the Chairmanship of Professor Bradley, but he has found it impossible, under present conditions, to put aside other pressing duties to work on the Syllabus, and he has insisted that a new chairman be chosen, who can devote sufficient time to the work and bring out a new edition soon.

Chairman Bradley has devoted much time to the work on the several revisions, without compensation and by the practice of rigid economy the expenses for printing, postage and supplies have been met by the sale of the book and the small contributions from the three organizations (A. PH. A., N. A. B. P., A. A. C. P.) which appoint the members of the Committee. These bodies are deeply appreciative of the successful work carried on by Dean Bradley.

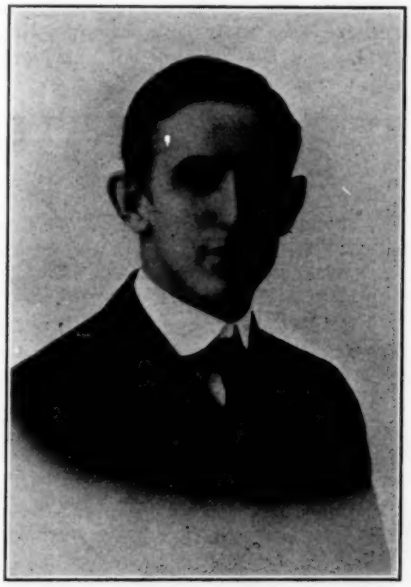
The activities of the retiring Chairman and former President of the A. PH. A. are known to the readers and, hence, a sketch is not given here except by reference to the one in the JOURNAL A. PH. A. for March 1926, page 159.

THE NEW CHAIRMAN OF THE PHARMACEUTICAL SYLLABUS.

Prof. J. G. Beard, of Chapel Hill, N. C., has been unanimously elected as the Chairman of the Committee on Pharmaceutical Syllabus. His activities and interest speak for his qualifications for the work and he has accepted the chairmanship because of the opportunity it offers for service to pharmacy and pharmaceutical education. Reference is made in the

succeeding paragraphs to some of Professor Beard's activities. He has been eminently successful in State Association work, being Secretary-Treasurer of the North Carolina Pharmaceutical Association and Editor of the *Carolina Pharmacist*, its official journal, by which he has been kept in the closest contact with every phase of pharmacy in his state, and he is thoroughly acquainted with the practice of pharmacy and the conduct of the present-day drug store.

John Grover Beard matriculated at the University of North Carolina School of Pharmacy in 1907, graduating in 1909. During his senior year he was appointed Assistant



J. G. BEARD.

in Pharmacy and, thereafter, Instructor in Pharmacy until 1914, in which year he was elected Assistant Professor and to full professorship, in 1919; the additional duties of Secretary of the School of Pharmacy were added in 1915. Dean E. V. Howell has been given a year's leave of absence and Professor Beard is now the Acting Dean. He has taught or is at present in charge of teaching the following subjects: Materia Medica, Pharmacy, Dispensing Pharmacy, Commercial Pharmacy, Pharmaceutical Arithmetic and Pharmaceutical Latin; Materia Medica and Pharmacology for medical students. He is the author of "Therapeutic Terms and Common Diseases" and co-author with George Howe of "Latin for Pharmacists."

Professor Beard has been chairman of the A. PH. A. North Carolina Membership Committee since 1919; was vice-chairman of the House of Delegates in 1920; Local A. PH. A. Secretary, when the ASSOCIATION met in Asheville; he is the North Carolina Chairman of the A. PH. A. Headquarters Building Fund; was chairman of the Section on Education and Legislation, in 1925. He was vice-president of the A. A. C. P., he is the chairman in District 5 of the sectional meetings of A. A. C. P. and N. A. B. P.; chairman of Teachers Conference on Commercial Pharmacy, A. A. C. P., 1927–1929; vice-president of the Conference of Pharmaceutical Association Secretaries, 1927–1928, and at present a member of its Executive Committee. He was president of the Elisha Mitchell Scientific Society, 1917–1919, and is a member of Kappa Sigma and Kappa Psi fraternities.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

According to the *Pharmaceutical Journal and Pharmacist* of October 20th, arrangements are now being made for the fifth International Congress of Military Medicine and Pharmacy which is to be held in London in May 1929.

"During the War, with a view to affording the maximum benefit from the knowledge gained by each of the allied countries, in the treatment of wounds, inter-allied surgical conferences were instituted, and as a result, a series of general rules for the treatment of all types of injury was formulated.

"The Belgian Army Medical Service, considering that this fruitful scientific collaboration should be continued in peace time, took the initiative of holding an International Congress of Military Medicine and Pharmacy, to which all allied and neutral nations were invited. This meeting was held in Brussels in 1921, under the patronage of H.M., the King of the Belgians, and twenty nations were represented. Two years later, there was a Congress at Rome, under the patronage of H.M., the King of Italy, attended by representatives of thirty-five nations. The third Congress was held in Paris in 1925, under the patronage of the President of the French Republic, and forty nations were represented, while a fourth Congress took place at Warsaw, under the patronage of the President of Poland, in 1927, at which thirty-two nations were represented.

"The holding of the fifth Congress in May 1929, falls to Great Britain, and His Majesty, the King has been graciously pleased to give his patronage. Field-Marshal H. R. H., the Duke of Connaught, K.G., has consented to be Vice-Patron. The meetings will be held in the Grand Hall of the British Medical Association from May 6th to 11th.

"The Presidents of the Honorary Committee are the First Lord of the Admiralty, the Secretary of State for War and the Secretary of State for Air, while the Prime Minister and all the other Ministers of State and the Lord Mayor of London have agreed to be Honorary Presidents. In addition there are sixty honorary Vice-Presidents, representative of the Services, the House of Commons and Medicine and Pharmacy, the St. John and St. Andrew's Ambulance Associations and the British Red Cross Society. The representative of Pharmacy is Major E. Saville Peck, M.A., member of the Council of the Pharmaceutical Society and president of the League of Ex-Service Pharmacists.

"An important organizing committee has been formed presided over by Lieut.-General Sir Mattew Fell, K.C.B., C.M.G., K.H.P., F.R.C.S., Director-General Army Medical Services. The Secretary of the Congress is Major A. D. Stirling, D.S.O., M.B., R. A.M.C., The War Office, Whitehall, S. W. 1.

"The subjects to be discussed are: 1. Evacuation of sick and wounded by water and by air. The rôle of the Medical Services in combined operations. (Reporting countries, Great Britain and France.) 2. Tropical fevers of short duration. (Reporting countries, Great Britain and The Netherlands.) 3. Wounds of blood vessels and their sequalæ. (Reporting countries, Great Britain and Belgium.) 4. The physical and chemical analysis of the glass and rubber articles employed by the Medical Services. (Reporting countries, Great Britain and Spain.) 5. The standard of dental and physical fitness in the various military services. (Reporting countries, Great Britain and Cuba.)

"In connection with the Congress, an exhibition of medical equipment of the Services and of drugs, dressings, surgical instruments and appliances, etc., will be held; and visits will be made to Naval, Military and Royal Air Force stations, where demonstrations of the various activities will be given.

"A ladies' committee is being formed to accompany the wives and daughters of Congressists and to conduct them to various places of interest in London. All medical officers, dental surgeons and pharmacists belonging to, or having belonged to, the forces of all nations admitted to membership of the League of Nations, are invited to the Congress, and also all officers belonging to organizations in association with the Medical Services. The subscription is fixed at 10s. for gentlemen, and 7s. 6d. for ladies. This entitles the subscriber to copies of the official reports and to participation in the official excursions and receptions organized for the Congress. Congressists must notify the Secretary of their intention to be present as early as possible before January 1929, and at the latest by February 1st. The railway companies in Great Britain and Ireland have agreed to issue first- and third-class tickets available from May 4 to 13, 1929, at the ordinary single fare, and one-third for the double journey for all those attending the congress."

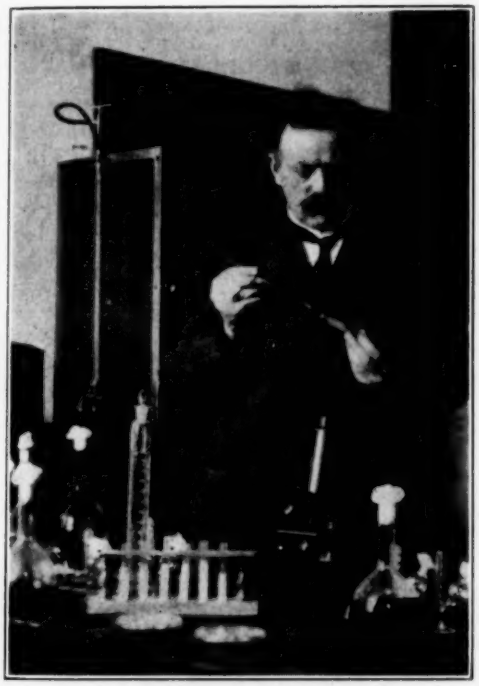
Apothecaries in Procession.—The Society of Apothecaries in London leaving their hall, October 30th to attend the Master's Day Service at St. Andrews by the Wardrobe.

Richard Hudnut—for a number of years retail pharmacist at 20th & Broadway, New York City—died October 21st, at Chateau Juan at Juan Les Pims, a resort near Nice, where he owned a villa. Mr. Hudnut began the manufacture of perfumes while engaged in the retail drug business, from which he retired some years ago, having amassed a fortune.

OBITUARY.

ALBERT SCHNEIDER.

The news of the death of Dr. Albert Schneider came as a shock; he died while on his way to the North Pacific College, Saturday morning, October 27th. He was scheduled to lecture before the Portland police school during the morning and had left his Portland home prior to the lecture hour in order to look after some work at the College. A press report gives the cause of death as cerebral hemorrhage.



DR. ALBERT SCHNEIDER.

Dr. Schneider was born April 13, 1863. He graduated in medicine at the College of Physicians and Surgeons (Chicago) in 1887; received the B.S. degree from the University of Illinois in 1887, the M.S. from the University of Minnesota in 1894 and, in 1897, the Ph.D. from Columbia University. In this record and by later activities it will be seen that he was always a student, carrying on studies and investigations while teaching others. In 1893, he was instructor in botany at the University of Minnesota; from 1897 to 1903 he held the chair of pharmacognosy and bacteriology in Northwestern University school of pharmacy; during the years 1903–1906 he was professor of pharmacognosy and bacteriology, and materia medica and therapeutics at the University of California. In 1906–1907 he directed the work at Spreckels Experiment Station. In 1909, he was pharmacognosist for the U. S. Department of Agriculture; in 1910, he became editor of the *Pacific Pharmacist;* for a time he was a member of the faculty at the University of Nebraska School of Pharmacy, and since 1922 dean and professor at the School of Pharmacy, North Pacific College of Oregon.

He was the author of a number of books and monographs, among them: "Primary Microscopy and Biology" (1890), "Text Book on General Lichenology" (1897), "Guide to the Study of Lichens" (1898), "Microscopy and Microtechnique" (1899), "Hints on Drawing for Students of Biology" (1899), "General Vegetable Pharmacography" (1920), "The Limitations of Learning and Other Science Papers" (1900), "Powdered Vegetable Drugs" (1902), "Bird and Nature Study Chart Manual" (1903), "Medicinal Plants of California" (1909), "Drug Plant Culture in California" (1911), "Pharmaceutical Bacteriology" (last revision, 1920); Translator of Westermaier's "Compendium der Allgemeinen Botanik" (1896).

The PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION during the past 30 years speak of this worker's activities. Among the earliest ASSOCIATION papers are the following: "On Teaching Microscopy, Botany, Physiology, Pharmacodynamics, and Urine Analysis in Colleges of Pharmacy," "Pharmaceutical Bacteriology," "Suggestions on the Introduction of Powdered Vegetable Drugs in the U. S. Pharmacopœia," "The Gross Histological Character of Powdered Coto, Paracoto, Winters and Canella." The last papers published relate to "Dermographia: Dermographic Tests and Observations," "Earthworm Method for Testing Santonin and Related Anthelmintics;" "Respiration Test as a possible Substitute for the Usual Basal Rate Determinations;" "Some Observations on Digitalis Action." At the recent meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION he presented three papers; "Respiratory Tests for Determining the Rate of Oxygen Metabolism," "The Rubber Band Skin Reaction," "A Simple Spectroscopic Measure of Tissue Metabolism."

It will be admitted that a picture showing the deceased in the laboratory is not out of place in this sketch.

Dr. Schneider was internationally known as a criminologist, for his gland operations on

criminals, for his re-discovery of the "lie detector" or "soul searcher," as some have designated the invention; he also was the inventor of a ventilation system. He took a leading part in the investigation which led to the identification of the D'Autremont trio, as the ones who held up a Southern Pacific train in the Siskiyon mountains.

These references will in part, speak for the activities of the deceased. He became a member of the AMERICAN PHARMACEUTICAL ASSOCIATION in 1899, and he also held membership in a number of other scientific and fraternal organizations.

Dr. Schneider is survived by his wife, Mrs. Mary Schneider and his daughter, Miss Elspeth Schneider. Miss Schenider is a graduate of the University of California and has spent the past two years teaching in the State Teachers' College at Chico, Cal., where she gained a year's leave of absence to do post-graduate work at Columbia University. Sympathy is expressed to the bereaved and acknowledgment of the high regard and esteem in which the husband and father was held by the membership and the profession generally.

LORENTZ ALOYSIUS SEITZ.

Lorentz A. Seitz, member of the AMERICAN PHARMACEUTICAL ASSOCIATION since 1901, died suddenly October 23rd. The cause is given as high blood pressure, from which Mr. Seitz had been suffering for several years.

Mr. Seitz was president of St. Louis College of Pharmacy for a number of years and also of the St. Louis Retail Druggists Association, and a former president of Missouri State Pharmaceutical Association. The deceased retired from business about two years ago; for thirty years prior he owned a store at 4th & Cedar Sts., St. Louis. He was an alumnus of St. Louis College of Pharmacy.

The deceased was born at Middlebrook, Mo., 59 years ago; he is survived by his widow, to whom sympathy is extended in her bereavement.

Dr. J. M. Hundley, of Baltimore, one of the founders of the American College of Surgeons, member of the medical faculty of the University of Maryland, died November 3rd, aged 70 years. He graduated from Maryland College of Pharmacy in 1878, and, thereafter, matriculated in the Medical School of the University; some years after graduation he was elected to the faculty of his *Alma Mater*, holding the Chair of Gynecology for more than a quarter of a century, and was widely known in his specialty.

The practical pharmacy experience of Dr. Hundley was gained in the pharmacy of N. Hynson Jennings at 90 N. Charles St., Baltimore.

CHRISTIAN HENRY SCHOENHUT.

We are advised of the death of Christian Henry Schoenhut, of Lakewood, Ohio, September 27th. Mr. Schoenhut became a member of the AMERICAN PHARMACEUTICAL ASSOCIATION in 1880, and a Life Member three years ago. Sympathy of the ASSOCIATION is expressed.

JOHN RICHARD PITT.

John Richard Pitt, member of the AMERICAN PHARMACEUTICAL ASSOCIATION since 1872, died August 14th, at his home in Middletown, Conn., aged 82 years. The deceased was associated in business with Charles Pelton for a number of years and for nearly four decades owned and conducted a drug store where the Washington Hotel is now located.

Mr. Pitt held membership in a number of fraternal organizations, being a veteran of the Masonic bodies, the Odd Fellows and Elks. He is survived by one daughter, Mrs. Walter Roland, of Milford and a step-daughter, Miss Ida L. Maynard with whom he made his home; we are indebted to the latter for these data; sympathy is extended to the bereaved.

PERSONAL AND NEWS ITEMS.

Secretary E. L. Newcomb has a hopeful outlook for the activities of the N. W. D. A. The increase in dues, voted at the recent meeting, will enable the Association to carry on and extend its work. A meeting of the New England members was held last month in Boston, at which time a report on the departmental cost-accounting program and on the further work of the Druggists' Research Bureau was considered. Christmas window displays are ready, and preparations are on foot for next spring's First Aid Week.

D. O. Haynes & Co., have presented a copy of the 24th Edition, 1929, of the "Era Druggists Directory" to the ASSOCIATION. It is a useful addition to the reference volumes of the Secretary's desk and thanks are extended the publishers. The Directory lists all retail and wholesale druggists in the United States and Canada, and of manufacturers; street addresses are given. Secretaries of associa-

tions and many wholesalers and manufacturers and advertisers have found this Directory indispensable in their business.

C. MAHLON KLINE DINNER.

Officers, directors and former presidents of the Philadelphia Drug Exchange and representatives of the local members of the National Wholesale Druggists' Association, gave a dinner to the President of the N. W. D. A., C. Mahlon Kline, at the Penn Athletic Club, October 24th.

Among the speakers were Charles E. Hires, E. J. Lavino, Alexander C. Fergusson, Jr., Walter P. Miller, Lester B. Johnson and J. Clifton Buck. In 1885, forty-three years ago,

C. M. KLINE.

the father of Mr. Kline was president of the N. W. D. A.

Among those present at the dinner were: John F. Belsterling, F. L. Bodman, J. Clifton Buck, James A. Clarke, Joseph W. England, Alexander C. Fergusson, Jr., William K. Freas, Edward H. Hance, A. L. Hilles, Jr., Charles E. Hires, A. J. Jewell, Lester B. Johnson, C. Mahlon Kline, E. J. Lavino, Herbert R. McIlvaine, Walter P. Miller, J. H. Schenck, C. N. Silvey, Howard E. Smith and Walter V. Smith. Congratulatory letters were received from Miers Busch, H. K. Hineline, Harrison S. Hires, Richard V. Mattison, George W. Merck, George D. Rosengarten and B. S. Thorp.

President Kline expressed his thanks and appreciation of the honor which had been paid to him, pledged his best endeavor and asked for coöperation in making his administration a success.

The retirement of Dr. George M. Kober, after twenty-seven years' service as dean of Georgetown University School of Medicine, Washington, is announced. In accepting his resignation President Nevils tendered Dr. Kober a place on the board of regents of the University and the title of dean emeritus of the medical school.

Both **Mr. and Mrs. Otto E. Kistner,** of Cincinnati, who were injured in Los Angeles when struck by a motorcycle, are on the road to recovery. They had been spending the day at Los Angeles after attending the N. A. R. D. convention in San Francisco, and were hit by a motorcycle while attempting to cross the street.

Joseph N. Thibodeaux, of Houston, Tex., has presented a copy of the 4th Edition of the United States Pharmacopœia to the AMERICAN PHARMACEUTICAL ASSOCIATION. This donation completes a set of U. S. Pharmacopœias and the ASSOCIATION expresses thanks for the gift.

The new central parkway of Cincinnati has been formally opened and in connection with this a three-day celebration was held. Our fellow-member, **Frank H. Freericks,** is President of the Central Parkway Decoration Citizens' Committee and **D. C. Keller** is the Treasurer. **J. H. Dornheggen** and **Joseph Schneider** also were on the Committee celebrating the opening event.

C. B. Whilden, formerly of San Francisco, and for a number of years located in Marion S. C., is Secretary of the Chamber of Commerce of his home city.

The 75th birthday of **Dr. Edward H. Squibb** was celebrated with a testimonial luncheon tendered by fellow-members of the Board of Directors, of E. R. Squibb & Sons. Dr. Squibb is still active and takes an interest in the affairs of business and also in the research laboratories.

AMERICAN MEDICAL ASSOCIATION BROADCASTS.

The A. M. A. daily health talks are now given from Association Headquarters.

The program for the week of October 29th to November 3rd was as follows:

October 29th.—"Medical Mail Order Frauds," by Dr Arthur J. Cramp, director of the Bureau of Investigation.

October 30th.—"Keeping Employees in Good Health," by Dr. John M. Dodson, director of the Bureau of Health and Public Instruction.

October 31st.—A reading from Hygeia, "Are You a Dietary Diplomat?" presented by Miss Lois Stice of the editorial staff of Hygeia.

November 1st.—"Light—Its Dangers," by Mr. H. J. Holmquest, executive secretary of the Council on Physical Therapy.

November 2nd.—"Making a Human Inventory," by Dr. R. G. Leland, assistant director of the Bureau of Health and Public Instruction."

November 3rd.—"The Curative Value of Drugs—Difficult to Determine," by Mr. Cecil Bean of the Council on Pharmacy and Chemistry.

NEW AND NONOFFICIAL REMEDIES.

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

W. A. PUCKNER, *Secretary.*

DIPTHERIA TOXIN-ANTITOXIN MIXTURE.—(See New and Nonofficial Remedies, 1928, p. 366).

The antitoxin used in the toxin-antitoxin mixture is produced from the horse, goat or sheep.

E. R. Squibb & Sons, New York.

Diphtheria Toxin-Antitoxin Mixture (New Formula) (Sheep)-Squibb.—Each cubic centimeter represents 0.1 L+ dose of diphtheria toxin neutralized with the required amount of antitoxin obtained from the sheep. Marketed in packages of three ampuls, each ampul containing 1 cc. of the mixture; in vials containing, respectively, 10, 20 and 30 cc.; and in packages of thirty 1-cc. ampuls.

PARATHYROID HORMONE-SQUIBB.—A stable, aqueous solution containing the active principle or principles of the bovine parathyroid glands and having the property of relieving the symptoms of parathyroid tetany and of increasing the calcium content of the blood serum. It is standardized physiologically so that each cubic centimeter contains 20 units as defined by J. B. Collip, one unit being 1/100 of the amount necessary to increase by 5 mg. the blood serum calcium from 100 cc. of blood at the end of fifteen hours in a normal dog weighing 20 Kg.

Actions and Uses.—Parathyroid hormone-Squibb is specific for the tetany of normal or parathyroidectomized animals and is claimed to be equally specific for normal or parathyroidectomized man when injected subcutaneously for increasing the level of the blood serum calcium. It has been reported to be of value in infantile and maternal tetany, in lead poisoning, in idiopathic menstrual bleeding, in hemorrhage and in relief of certain symptoms of tuberculosis. Due precaution should be taken to avoid the dangers of hypercalcemia that result from overdosage or from continued administration of small doses.

Dosage.—Parathyroid hormone-Squibb is administered subcutaneously, the dosage varying with the severity of the condition in which it is used and with the individual to whom it is administered. In chronic parathyroid tetany as much as 30 units, repeated if necessary two or three times in the first twenty-four hours, is suggested. After symptoms have cleared up, one injection every second day is considered adequate. In infantile tetany an initial dose of 10 units, followed by a similar dose if convulsions are not relieved, has been reported to be successful.

Manufactured by E. R. Squibb & Sons. No U. S. patent or trademark.

Parathyroid Hormone-Squibb, 5 cc.: Each cubic centimeter contains 20 units.

Parathyroid hormone-Squibb is prepared from fresh bovine parathyroid glands. The glands are minced and then digested by boiling with diluted hydrochloric acid. The insoluble residue is removed and the solution purified by fractionation with alcohol, acetone and ether. Final separation of the active principle is effected by isoelectric precipitation, the resultant product containing a minimum of pigmentary impurities and inert protein. The finished product is filtered, standardized physiologically, and adjusted to contain the desired number of Collip units.

TETANUS ANTITOXIN, CONCENTRATED (New and Nonofficial Remedies, 1928, p. 356).

Eli Lilly & Company, Indianapolis.

Tetanus Antitoxin (New and Nonofficial Remedies, 1928, p. 357): Also marketed in a syringe containing 20,000 units.

From *Jour. A. M. A.*, Oct. 13, 1928.

EDITOR OF THE LANCET IN UNITED STATES.

Sir Squire Spriggs, editor of the *Lancet*, founded in 1823, is visiting in the United States. He was designated to deliver the Hunterian oration before the American College of Surgeons, which met in Boston, last month, when

he was made an honorary fellow of the college. In connection with his visit to this country he decided to visit a few of the medical institutions of the United States and Canada with "the view of making a brief report, upon returning to England, on medical education."

An object of his visit is to speed up reciprocity between this country and Great Britain concerning medical subjects. The suggestion is a timely one for pharmacy.

SOCIETIES AND COLLEGES.

THE CAPPER-KELLY BILL TO BE DISCUSSED BY THE AUTHORS OF MEASURE.

Senator Arthur Capper and Representative Clyde Kelly will be the speakers in Soldiers' Memorial Hall, Pittsburgh, Pa., November 20th. The seating capacity of the hall is only 1000 and, hence, tickets will be issued and a charge of 50 cents made to defray the expenses. The passage of the measure means much to druggists and Senator Capper and Congressman Kelly are giving their best efforts in the promotion of the bill, which will be considered during the second session of the 70th Congress. It is to be hoped that the authors will be strongly supported in their efforts. The Western Pennsylvania Retail Druggists' Association is to be congratulated for arranging the meeting. They invite druggists from outside of the state to come, but it is necessary to secure tickets in advance to be assured of a seat. Representative Clyde Kelly is also interested in the establishment of a Pharmacy Corps in the Army.

STATE-WIDE LEGISLATIVE SESSION OF DRUGGISTS.

The first state-wide legislative session of the druggists of Pennsylvania will be held at Harrisburg, November 22nd. The Dauphin County Retail Druggists' Association is planning to entertain 1000 druggists and their wives in Harrisburg on that date. The purpose of this one day meeting in Harrisburg is to discuss needed legislation and perfect plans for a successful legislative year.

Among the measures which will be presented for consideration during the meeting at Harrisburg are:

Restricting the sale of drugs and medicinals to drug stores. (A real bill with public appeal.) Regulating the sale of medicinals for internal use. Placing pharmacists in hospitals and in the public health service. A larger budget for the enforcement of pharmacy laws. More agents for protection against the sale of drugs by unlicensed establishments. Exemption of registered pharmacists from the bi-annual medical examination. Qualified assistant pharmacists. State aid for the improvement of the practice of pharmacy. The dispensing physician. Restricting the drugless cults.

RE-REGISTRATION NOTICE OF DISTRICT OF COLUMBIA BOARD OF PHARMACY.

W. T. Kerfoot, Jr., Secretary of the District of Columbia Board of Pharmacy—S. E. cor. 7th and L Sts., N. W., Washington, has given notice that under the law of the District of Columbia to regulate the practice of pharmacy and the sale of poisons and for other purposes, as enacted by Congress, May 7, 1906, and amended February 27, 1907, and March 4, 1927, every licensed pharmacist and every licensed dealer in poisons who have been so licensed in the District of Columbia for not less than three years prior to the first day of November 1928 are, under Section 7 of the Act, required to make application to the Board of Pharmacy for re-registration during the month of November 1928. Failure to comply will result in the suspension of license. The fee for licensed Pharmacist is $3.00 and for licensed Dealer 50 cents.

FEDERAL WHOLESALE DRUGGISTS' ASSOCIATION.

The Federal Wholesale Druggists' Association met in Philadelphia during the week of October 18th. The address of President J. H. Marshall was comprehensive, reviewing the status of the wholesale and retail drug trade and considered buying, selling, coöperative efforts and educational work.

Secretary R. E. Lee Williamson reported on the growth of the organization from a very limited membership to its present of more than 15,000, with a sales volume of 70 million dollars.

Among the resolutions, several had to do with the activities of the Association—Membership of only one coöperative wholesale com-

pany in a city; another for the organization of more coöperative companies.

A Pharmacy Corps in the U. S. Army was endorsed. There was little change in the official family, the officers are: *President*, J. H. Marshall, Minneapolis; *Vice-President*, R. L. Stall, Atlanta; *Secretary*, R. E. Lee Williamson, Baltimore; *Treasurer*, O. J. Cloughly, St. Louis; *Executive Committee*, J. J. Dreyer, Newark, N. J.; John C. Krieger, Buffalo; Frank R. Rohrman, Philadelphia. Mr. Rohrman succeeds Mr. Stall as a member of the executive committee.

OFFICERS OF ARIZONA PHARMACEUTICAL ASSOCIATION.

Arizona pharmacists met in convention at Bisbee, October 17th–18th. President Smith's address centered on organization work and legislative promotions. A pharmacy bill has been drafted and the people are to be impressed with the importance of the legislation as a public health measure. The measure amends the present law; it is proposed to have Section 12 read:

"It shall be unlawful for any person not a registered pharmacist within the meaning of this act, or any firm, corporation, or co-partnership, to open or conduct a place of business, pharmacy, dispensary, drug store, apothecary shop or store, in which drugs, medicine or poisons are retailed, compounded or dispensed, or to stock, expose, offer for sale, at retail, any drugs, medicines, chemicals, poisons, also medicinal preparations known as U. S. P. products and put up in handy packages for household purposes or otherwise known as household wets or drys, except as otherwise specifically provided; or to use or exhibit the title of drugs, drug store, drug shop, pharmacy or apothecary or any combination of such titles, or any title or description of like import, or any other term or terms designated to take the place thereof, without placing in active personal charge thereof at each place of business a pharmacist duly registered or licensed by the board of pharmacy of this state.

"Every pharmacy shall be owned by a licensed pharmacist; every drug store shall be owned by a licensed druggist; and no co-partnership shall own a pharmacy unless all the partners are licensed pharmacists, and no co-partnership shall own a drug store unless all the partners are licensed druggists."

The officers of the Association are:

President, Edward Dorsey; *Vice-President*, H. A. Twining; *Treasurer*, Al L. Boehmer; *Secretary*, Arthur G. Hulett; *Executive Committee:* J. Homer Smith; T. Ed. Litt; A. Guy Crouch C. M. Wood and James Ball.

ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS.

The 44th annual meeting of the Association of Official Agricultural Chemists was held in Washington, during the last week of October. The address of President Oswald Schreiner dealt with "The Rôle of the Rarer Elements in Soils, Foods and Drugs." He showed slides exhibiting the influence of manganese, copper and boron. He pointed out the need for methods which will measure minute quantities of the rarer elements without the necessity for enormous concentration.

The Drug Section was presided over by Chairman A. G. Paul who discussed "Anæsthetics," particularly ether and chloroform and also mercurials and arsenic compounds. Among the papers presented in this Section was one by Wm. T. McCloskey and J. C. Munch on "Oil of Chenopodium;" J. C. Munch also contributed a paper on the "Testing of Male Fern."

Honorary President Harvey W. Wiley spoke on the "Life of Pasteur;" he stressed the importance of his work to agriculture. A testimonial dinner was given to Dr. Wiley, October 30th. The following were elected officers for the ensuing year:

President, H. B. McDonnell, College Park, Md.; *Vice-President*, E. M. Bailey, New Haven Conn.; *Secretary-Treasurer*, W. W. Skinner, Washington; *Members of the Executive Committee:* F. C. Blanck, Washington; L. D. Haigh, Columbia, Mo. and Oswald Schreiner, Washington.

Dean G. L. Curry of the Louisville College of Pharmacy has announced that the award, Simon N. Jones Memorial Scholarship for 1928–1929, has been made to Charles D. Blanford, of 2113 Hale Ave., Louisville, Ky.

Chester A. Duncan, Dean of Baylor University College of Pharmacy, resigned the deanship of that department on October 26th. Dr. Duncan had been dean of the Department since 1915.

Cincinnati College of Pharmacy has a new building, that is, a building which was originally built for a college has been remodeled to suit the needs of the School of Pharmacy. **Fred. S. Kotte** is president of the College.

SYMPOSIUM ON THE GENUS MENTHA.

BY G. A. RUSSELL,[1] CHAIRMAN.

The second annual Symposium on the Genus Mentha was held August 23, 1928, at Portland, Maine, during the annual convention of the AMERICAN PHARMACEUTICAL ASSOCIATION. There were present, thirteen men interested in the study of mints, no two of which approached the subject from the same angle.

Prof. F. J. Bacon of Western Reserve University gave an illustrated talk on "The Botanical Origin of American Peppermint," and pointed out that the peppermint oils of commerce are derived from several species, varieties or forms of the genus mentha. His study of the wild and cultivated mints yielding the oils of commerce show all gradations of form, from the capitate inflorescence to the spicate inflorescence and a combination of the two forms on the same plant.

Bacon stated that most recent authors are in accord with the present hybrid origin of peppermint because of the varying types of plants yielding peppermint oil and the fact that the plant is sterile. His researches have shown that the hybrid nature of *M. piperita* L. has been established by a comparison of morphological characteristics and not by experiment hybridization. Bacon plans to conduct such experimental hybridization and to make a phytochemical study of the oils in an attempt to establish the origin of the American Peppermint Plant.

Prof. Edward Kremers of the University of Wisconsin reviewed the work of some of his students on the non-volatile constituents of *M. piperita* and *M. arvensis*, and mentioned the work of Dr. Gordon on *M. aquatica*. Kremers pointed out that whereas the oil of peppermint had been known for several generations, no one has until the present, given any thought to the non-volatile constituents of the plant. Gordon's work on *M. aquatica* was done under a fellowship from the National Research Council and will soon be published. Dr. Braun, another student of Prof. Kremers', is now carrying on a parallel line of study on *M. piperita*.

Dr. C. K. Glycart of the Chicago Station, Food, Drug and Insecticide Administration, reported on a survey made of the peppermint-producing areas of Indiana and Michigan. He called attention to the most recently discovered enemy of the mint plant, the mint flea-beetle. The State Department of Agriculture, at Lansing, Michigan, have given this pest serious study and have issued bulletins describing the beetle, its life cycle and its control.

Dr. Glycart pointed out that adulteration of peppermint oil was not common, but that in the past, certain producers had sophisticated by substituting both lard and coal oil. He further pointed out the Japanese Peppermint Oil (corn-mint oil) must be imported and sold only in strict compliance with the rulings of the Food and Drugs Act.

Prof. B. V. Christensen of the University of Florida has become interested in *M. arvensis* as a possible minor crop for his state. The College of Pharmacy of the University is carrying on a series of coöperative experiments to determine the effect of climatic conditions on the menthol content of Japanese Peppermint. A few comparative results have been obtained but the experiments have not yet been developed sufficiently to warrant definite statements. The results to date, however, give promise of some interesting conclusions within a brief time.

Prof. W. O. Richtman of the University of Wisconsin talked very informally of his breeding experiments with mints. These experiments are just getting nicely under way and give promise of most interesting results, both of academic and commercial importance. Richtman will inaugurate and carry on at the same time, a series of experiments dealing with the effect of commercial fertilizers on the yield and quality of peppermint oil, a subject that has not previously received the attention that it warrants.

The next meeting of the symposium will be held at Rapid City, South Dakota during the week of the seventy-seventh annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION.

[1] Greensboro, N. C.

NATIONAL INSTITUTE OF HEALTH.

The Senate Committee on Commerce has recommended the enactment of the Ransdell Bill, which provides for an agency for pure scientific research relating to the cause and prevention of diseases; it sets up an agency which may receive and administer gifts to provide such research and also a system of fellowships to provide trained personnel for public health work. This Institute is to be under the administration and control of the Surgeon-General of the Public Health Service.

LEGAL AND LEGISLATIVE.

REGULATIONS GOVERNING LIQUOR PRESCRIPTIONS FOR MEDICINAL PURPOSES ARE AMENDED.

Changes in the regulations governing the issuance of prescription blanks to physicians for use in prescribing liquor for medicinal purposes were announced, October 26th, by the Bureau of Prohibition, in an order signed by the Commissioner of Prohibition, Dr. J. M. Doran. The order reads in full text:

To prohibition administrators, and others concerned: Sections 1710 and 1712, of Regulations 2, are amended to read as follows:

Sec. 1710.—Stubs to be returned to the Administrator-Prescription blanks on Form 1403 for medicinal liquor are printed in duplicate with stubs attached to both original and duplicate. The stubs of the original prescriptions will not be detached by the physician, but must remain in the book.

The stubs of the duplicate prescriptions issued during the month must be detached by the physician and forwarded to the Prohibition Administrator at the end of the month or within ten days thereafter. Any multilated or defaced prescription blanks, both original and duplicate, in the possession of the physician must be returned to the Administrator and proper notation made by the physician on the stubs.

The duplicate copies of prescriptions for medicinal liquor written on unofficial forms in emergency cases must be forwarded to the Administrator at the end of the month when issued, or within ten days thereafter. Prescription blank, Form 1403, must in all cases be used by the physician in the order of the serial numbers in the book.

Sec. 1712.—Official blanks to be delivered to physicians in person or by registered mail—Books of official prescription blanks, Form 1403, will be delivered by the Administrator to a physician only upon receipt of a written request therefor, signed by the physician, except that if a physician holding a permit to prescribe medicinal liquor personally calls at the office of the Administrator, to whom he be known or properly identified, prescription blanks may be delivered to the physician and a receipt signed by him taken.

In cases where written request is received from the physician for a book of prescriptions, the Administrator will forward it to the physician by registered mail. The book containing all the stubs of the used original prescriptions must accompany the request of the physician for a new book of prescription blanks.

The book of stubs will be returned to the physician by the Administrator, together with the new book of prescription blanks. The book of stubs returned to the physician must be retained by him as a permanent record of prescriptions issued by him, subject to inspection by Federal officers.

Paragraphs 78 and 79, of Regulations 1, are amended to read as follows:

Par. 78.—Physicians' prescription books, Form 1403, will be issued from the withdrawal section. Stub books of returned original prescriptions will be promptly checked and records pertaining thereto will be kept current. Each stub in the book will be examined to ascertain particularly the following information:

(*a*) Whether the previous book was issued within 90 days;

(*b*) Whether the stubs are signed by the physician in his own handwriting;

(*c*) Whether the physician's signature and address agree with the card record;

(*d*) Whether the prescriptions have been written in chronological order;

(*e*) Whether the kind and quantity of liquor and directions for use are properly stated;

(*f*) Whether two prescriptions were written for the same patient within 10 days;

(*g*) Whether the prescription has been given for a disease usually prescribed for;

(*h*) Whether any prescription was written by the doctor for himself.

Prescription books must be sent to physicians by registered mail when request for the book is made in writing. If the request is made by the doctor in person, a receipt will be taken for the book delivered to him. A record of books issued will be made on Form 1416.

Upon receipt of advice that a doctor has lost his book or that it has been stolen, the doctor will be required to make an affidavit setting out the circumstances. In such cases an inspection should be made with a view to recovering the missing book.

"Physicians' requests for additional books of prescription blanks shall be acted upon promptly in accordance with Section 1708 (*b*), Regulations 2.

"*Par. 79.*—The stubs of duplicate prescriptions sent to the Administrator by physicians at the end of each month will be filed in

numerical sequence for each physician. These stubs will require no audit and will be used only for reference in connection with the audit made of canceled original prescriptions under Paragraphs 598 to 601, inclusive."

Par. 602 of Regulations 1, is hereby rescinded.

CHAIN STORE INVESTIGATION.

On October 18th the Federal Trade Commission announced that the inquiry into chain stores was directed by Senate Resolution 224, Commission. Agents of the Commission are investigating chain stores, interviewing their officers, with reference to chain store organization and distribution and a general questionnaire is being formulated. A study will be made by the Commission of competitive conditions and consolidations to determine whether there have been any violations of the anti-trust laws. This was ordered under what is known as the Brookhart resolution.

THE DRUGGISTS' LIABILITY.

When a druggist delivers to the customer the article called for, with the label of the proprietary or patentee on it, he cannot justly be charged with negligence in so doing (West *vs.* Emanual, 198 P. 180). A druggist who holds himself out as the actual manufacturer cannot claim the benefit of exemption from responsibility for the quality or strength of patent or proprietary medicines where injury is suffered by their use.

CACHE OF OPIUM FOUND IN ANCHOR-CHAIN ROOM.

The largest shipment of opium ever seized east of San Francisco, according to the *New York Times*, was found by customs' inspectors on the arrival at New York of the President Harrison of the Dollar Line after a world cruise. After the ship had been searched from top to bottom and the ship's officers ordered to run out ninety-nine fathoms of anchor chain, they found the opium in the chain room. There were thirty-one burlap bags containing 2665 six-ounce tins, the peddling value of which runs into very large figures. Of the 163 members of the crew of the President Harrison, 131 were Chinese. The ship had touched at Hongkong and other Asiatic ports on her cruise. The ship's officers were taken before the law division of the customs service, and the ship was ordered not to leave port pending the filing of a $400,000 bond.

MORE CONSOLIDATIONS.

The Vadsco Sales Corporation has been chartered, merging American Druggists' Syndicate, V. Vivaudou, Inc., Kny-Scheerer Corporation. Under the plan Vadsco will be a holding company, owning all capital stock of the manufacturing units, which will continue under their present names, including in addition to the three leading companies, Alfred H. Smith Company, Parfumerie Melba, Inc., Delettrex, Inc. and Kleanwell, Inc., retaining all trade names and marks. David H. Schulte will be chairman of the board of the Vadsco Corporation.

The Van Vleet-Mansfield Drug Company, one of the oldest, if not the oldest, wholesale drug house of the South, and Hessig Ellis Drug Company have been consolidated. The central business of the two companies is in Memphis and they have branches in Jackson, Miss., and Little Rock, Ark.

The May Drug Stores Corporation of Pittsburgh have consolidated with Drug, Inc.

Plans in New York contemplate a combination of a thousand independent retail stores in the Drug Service Corporation, of which Samuel S. Dworkin is the treasurer. Joseph Nemerov has been named as president.

Articles of incorporation have been filed in Ohio for "Ure" Druggist, Inc. The incorporators are F. T. Roosa, R. E. Lee Williamson and Norman L. Sheffer. The incorporation papers state that the purposes for which this company is formed are: "To carry on the business of manufacturing, buying, selling, preparing, compounding and otherwise dealing in drugs, medicines, compounds, chemicals, proprietary articles, druggist's sundries, surgical apparatus, physician's and hospital supplies of every kind, nature and description; to establish warehouses incident thereto. To carry on the business of advertising in all its branches incident thereto to print, publish and circulate publicity material; to buy, sell, make, maintain, lease and erect signboards, display spaces, and posters and labels of every kind, nature and description."

The principal office will be located in Cleveland. Options have been secured on wholesale, retail and manufacturing establishments throughout the country. The plan also contemplates the location of warehouses for constituent members. It is also proposed

to finance the expansion of Ure druggist individually owned drug stores.

UNITED STATES PUBLIC HEALTH SERVICE INSPECTION OF VACCINES AND SERUMS IMPORTANT.

The United States Public Health Service, in connection with its inspection of biologic products as required by law, performs a service of inestimable value to the general public. Before a biologic product, such as a serum, toxin, vaccine or antitoxin, may be sold in the United States in interstate or international commerce a license must be obtained from the Public Health Service. The granting of a license means that inspection of the establishment concerned and laboratory examinations of samples of its products are made regularly to insure the observance of safe methods of manufacture, to ascertain freedom from contamination and to determine the purity or safety, or both, of the various products and the potency in cases where standards exist. From time to time lists of the manufacturing firms which produce such products that are licensed are published, together with the names of the products for which they are licensed. Such a list recently issued by the Public Health Service emphasizes the importance of this work.

ANIMAL EXPERIMENTATION.

H. R. 11998 seeks to prohibit experiments upon living dogs in the District of Columbia or in any of the territorial or insular possessions of the United States, and providing a penalty for violation thereof. It was introduced by request, by Representative Frear of Wisconsin and is pending before the Committee on the Judiciary. This bill aims to prevent the use of living dogs for experimentation or operation in any manner, in any jurisdiction under the exclusive legislative control of Congress. The bill is designed, it is understood, as an entering wedge, to be followed, if it is enacted, by legislation to prevent experimentation on other animals. Incidentally, the enactment of such legislation by Congress would presumably be urged as a reason for the enactment of similar legislation by the legislatures of the several states.

DRUG ADDICTION.

Many wild "estimates" have been made in recent years of the numbers of "drug addicts" in the United States. It is hard to understand how—and harder to understand why—some of these "estimates" were made. When, after all the guesses and propaganda, we can find figures that are based on facts, even though they are small, we are really pleased.

The Marine Hospital, operated by the U. S. Public Health Service, discharged 98,714 patients in the years 1925, 1926 and 1927. Of this large number, fifty-five were classified as "Cases of Drug Addiction." In 1925, there were thirty, in 1926, seventeen, and in 1927, only eight. The total number of patients was greater in 1926 than in 1925, and greater in 1927 than in 1926, but the number of cases of addiction went down 50 per cent in 1926 and again in 1927.

These figures are from a report of the U. S. Public Health Service. They are small but significant, because the Marine Hospitals probably get their full share of "addicts." *American Medical Association Bulletin*, October 1928.

BRAZIL A MARKET FOR PROPRIETARY MEDICINES.

There is a large demand in Brazil for proprietary medicines of various kinds, especially tonics, blood purifiers and remedies for rheumatism. The enervating climate and the unsatisfactory conditions prevailing in many parts of the country have stimulated the demand.

A large and well-developed pharmaceutical industry in Brazil produces many articles of good quality. In addition, several important foreign companies have established laboratories for the manufacture of their more important products in order to avoid the payment of import duties, which are very high. It is estimated that approximately 70 per cent of the total consumption is supplied by local manufacturers. Brazil's imports of medicinal pills, capsules, globules, etc., and chemical and pharmaceutical products have about doubled since 1922.

It is estimated that approximately 25 per cent of the total imports come from France, about 20 per cent from Germany and about 15 per cent each from the United States and Great Britain. The remaining 25 per cent come from Italy, Switzerland, Netherlands, Austria and other countries. (Consul General Claude I. Dawson, Rio de Janeiro.)

BOOK NOTICES AND REVIEWS.

Julius von Wiesner, Die Rohstoffe des Pflanzenreichs—(Raw Materials of the Vegetable Kingdom), Volume II, Leipzig, Verlag Von Wilhelm Engelmann, 1928, 1120 pages.

This is the second volume of an encyclopedic work edited by Paul Krais and Wilhelm von Brehmer dealing with the products of the plant world in the widest sense of the word. The volume before us is a good example of the thoroughness and scholarship of German investigators more particularly in the fields of botany and chemistry. In the present volume the following subjects are exhaustively treated.

I. Woods by W. von Brehmer. This section includes over five hundred pages of most valuable information concerning the botany, pharmacognosy, chemistry and other characters of various trees or rather of the woods obtained from various trees. The author first discusses the general structure of woods; then the microscopical characteristics. A very comprehensive and useful classification of the different families of trees is given. Then there follows a discussion of the physical properties and then again the chemistry. Finally general information about the properties and uses of various specimens of wood and statistical tables in regard to the distribution, production, exportation, etc., are appended. Any one interested in the physical, chemical or botanical characteristics of the rarest of woods may profitably browse through the pages and glean a great deal of useful information. There is a wealth of excellent illustrations and not the least important portion of the work is an exhaustive bibliography.

II. Following the treatise on woods, the next section by A. Zimmermann devotes some one hundred and forty pages to *Kautschuk, Guttapercha and Balata.* Those interested in the rubber industry will find this section of the greatest value, not only is there a description of the methods of preparation but the chemistry of rubber and its manifold applications as well as geographical statistics and commercial tables are included.

III. A most interesting section by von Brehmer and E. Konstanty follows this section and is devoted to a description of *Cork.*

IV. A separate section by F. Boas treats of organic acids found in various trees.

V. Another section by the same author is devoted to the consideration of Saponins. Here the various classes of Saponins are described, their chemical constitution is given as far as known, and pharmacological and physiological properties are touched upon and a very complete literature is appended.

VI. Another division of the book by Melchior and Konstanty is devoted to the *Slimes* and *Vegetable Gelatins.* This discussion is divided into several parts. The first is one of a general character, discussing the physical and chemical properties and reactions of the various slimy products of the plant world. In the second section specific substances are discussed. Here we find most interesting information concerning agar agar, vegetable gelatins, various barks, gums, etc., this section ought to be of great interest to the pharmacist, and also includes interesting illustrations and a large literature.

VII. A long chapter or sub-division of the work by von Brehmer and Zeisel is devoted to the *Starches.*

VIII. A chapter on *Vitamines* is contributed by Boas.

IX. Waxes are discussed by H. Wolff.

X. And finally in the concluding chapter of the book is a discussion by Kallmann, Jruger and Schneider on *Sugars.* This part of the work discusses a distribution of the sugars with special reference to the sugar-cane and sugar-beet and other sources of supply, the cultivation of these plants, the chemical constitution of sugars and other characteristics of interest in that connection. An exhaustive literature some two hundred and thirty-three references in addition to a list of general treatises accompanies this section of the work.

Altogether the hand-book before us is a most valuable one to have on the shelves of any scientific library and more particularly among the reference books to be possessed by the broad-minded botanist, chemist, pharmacologist and pharmacist.—D. I. MACHT.

Toxicology or the Effect of Poisons. By FRANK P. UNDERHILL, P. Blakiston's Sons & Co. This is the second and revised edition of the work before us which consists of some two hundred and eight pages of text $3^1/_2'' \times 6''$ in size. The comparatively small book contains six chapters, the first of which deals with the principles of toxicology, the second, with corrosive acid and alkalies, the third, with poisonous gases, the fourth, metallic poisons, the fifth, alkaloidal poisons and the final chapter of five pages touches upon a few miscellaneous organic poisons.

It is difficult to comprehend the *raison d'etre* of such a book, unless it is intended for popular reading by the laity, nurses, or perhaps that naive, innocent and disingenuous genus of half-baked pharmacists which is, fortunately, rapidly disappearing with the new and higher entrance requirements to schools of pharmacy, to whom every bit of the most elementary and puerile information sounds like a fairy tale. We certainly do not see how such a work could be of much use to a student of the better class of our medical schools. The information contained therein can be gleaned from any textbook on pharmacology and the title "Toxicology" is somewhat misleading. The modern scientist classes toxicology with pharmacology and when the term toxicology is used specifically it is generally meant to stress the chemical side of the subject. That is to our surprise the very aspect which the author himself, primarily a chemist, seems to have overlooked, for while the résumés of various drugs or poisons dealt with give a brief description of their pharmacological effects, pathological findings and treatment, there is no reference to chemical toxicology or the methods for detection of poisons, which most texts entitled Toxicologies lay stress upon. The most readable chapter in the book is that on poison gases to which forty pages are devoted and which conveys information not usually to be found in textbooks on pharmacology. That is probably due to the special experience of the author on the subject and accounts for the disproportionate amount of space devoted to it in this book. There are certain textbooks of very concise and condensed character such as Schmiedeberg's Pharmacology, Authenrieth's "Detection of Poisons" and Prof. Friedrich Müller's "Compendium of Internal Medicine," which have become scientific classics. We cannot class the work before us in the same category.—De V.

PUBLICATIONS RECEIVED.

Contributions to Knowledge and Value of Capsella Bursa Pastoris, Moench—a dissertation for attaining the Doctor's degree, submitted to the faculty of the University of Hamburg, by Fritz Boeckmann, Wilmersdorf, Germany. Receipt is acknowledged to the Institute of Applied Botany, Hamburg. The copy received is not the complete thesis, the Dean, Dr. Lohmann, reports that the latter has been properly filed. Shepherd's purse was employed in place of ergot and hydrastis during the War, on account of drug shortage. The candidate makes grateful acknowledgment of assistance rendered and outlines his years of schooling and training.

The Hamburg Institute for Applied Botany is under the direction of Dr. G. Bredemenn, to whom we are indebted for the annual reports (in one volume) from July 1917–June 1924.

Dissertation on Urginea maritima by WILHELM BARTHELS, Altona, Germany. The work is in partial fulfilment of the requirements for the Doctor's degree at the University of Hamburg. The contribution is dedicated to Hertha Krauel, deceased. The work represents research and laboratory investigations and is accompanied by a bibliography of a hundred or more references.

Contribution to Research on Chrysarobin and Methods of Determination. An abstract from a dissertation for the award of the Doctor's degree at the University of Hamburg by Hans Karl Jennrich. The candidate studied pharmacy at Marburg and passed the state pharmacy examination in 1923. Microchemical methods are reported on in this work.

Investigation of Gymnocladus Chinensis, Baill. By WERNER BUCKOFZER, Hamburg. Part of a dissertation filed in the library of the University of Hamburg. The work is in partial fulfilment of the requirements for the Doctor's degree. The candidate entered pharmacy in 1919, came to the University of Freiburg and, in 1923, he passed the state pharmacy examination.

Investigation of Ammoniac. Special attention is given to ammoresinol—an inaugural dissertation in fulfilment of the requirement for the Doctor's degree at the University of Basel, by IDA MICHEL of Basel. The suggestion for this work was made by Prof. Dr. H. Zörnig, head of the Pharmacy Institute of the University of Basel and the work was conducted under the guidance of Prof. Dr. P. Casparis. The candidate thanks her preceptors. The candidate entered the University in 1921 and passed an examination for pharmacist in the year following and received practical experience in "Sevogelapotheke" (Dr. C. E. Markees). Studies were continued at the Institute and in 1925 she passed the state pharmacy examination and in the spring of 1926 the work presented in the thesis was begun.

A history of Ammoniac is given; the greater part of the report is concerned with Ammoresinol in which the methods of Casparis are proved and in certain particulars improved upon. The dissertation closes with the author's conclusions, a summary and references to the important steps of the investigation.

Medical Specialties and Their Regulations. By ERWIN WINCKELMANN. Published by A. Deichertschen Verlagsbuchhandlung, D. W. Scholl, Königstrasse, Leipzig, Germany. Price, Mk. 6.80. Dr. Winckelmann is a pharmacist and member of the National Assembly. The work presented is the result of conferences and discussions with pharmacists, physicians and those engaged in the chemical and pharmaceutical industries anent proposed legislation regulating the practice of pharmacy and the sale of medicines and poisons. While concerned with German activities there is much of general interest and information and, therefore, this notice is given. The subjects are considered under three general divisions: General, Special, and Thoughts Relative to Development. The first includes an historical account of the establishment and development of the manufacture and trade in medicinal preparations; the growth and development of the chemical and pharmaceutical industries; the establishment of the pharmaceutical specialties.

In the second part the several activities discussed in the former receive further consideration. The chapters deal with the physician and specialties, wholesale and specialty trade, the pharmacy and the specialties, the public and the specialties, the food laws, the pharmacists own remedies, regulations and laws applying to specialties, international regulations and laws, and regulations in Germany and other countries.

Dr. Winckelmann has given thoughtful study to the subject and he presents the matter in a most interesting way; details are given whenever necessary and a number of the chapters are followed by relevant questions that have received consideration by the author.

Heil- und Gewurz-Pflanzen (Plants Yielding Drugs and Spices), prepared under the direction of Dr. Karl Boshart, Munich, Germany, being contributions of the German Horticultural Society in the interest and promotion of drug plant industry in its several divisions. The publishers are Dr. F. P. Datterer & Co., Freising-Munich. Advantageous prices may now be obtained by subscribers; after completion of the work, the price will be higher.

All of the contributors are well and favorably known in their respective fields. The 10th volume is in preparation. It is impossible to give space for an index of all the volumes and reference to a few of the contributions in Volume I will indicate the comprehensiveness of the work. Among the names of contributors are the following well known to pharmacists of this country: G. Edel, T. F. Hanausek, R. Kobert, Th. Meyer, R. Rapp, E. Schmidt, A. Tschirch, F. Wagner, H. Zörnig. The subjects cover a wide field; weather and climate in drug culture, technic of drying, drug mills, collection of drugs, seeding machines, culture of drug plants, prices of drugs, the soil, articles on different varieties of plants as to constituents and properties, buildings required, substitutes for other drug plants, native drug plants.

It is safe to say that no other work covers this particular field and industry so thoroughly.

Aus der Geschichte der Pflanzenwelt in Wort und Bild. (History and Picture of the Plant World.) By HERMANN PETERS. Society for the History of Pharmacy, published by Arthur Memayer; L. A. Kitter, distributor, 45 Sternwartenstrasse, Leipzig, Germany.

Many of our readers are members of the Society and they are also acquainted with Peters' "History of Pharmacy." All of the publications issued by the Society have value and interest and are well worth the cost of membership in it; these have been heretofore referred to or mentioned in the Historian's report. The publication referred to at this time is printed on paper which permits of very good imprints of the illustrations. The frontispiece is an excellent half-tone of Hermann Peters, who died in 1920, aged 72 years. The foreword sketches the historian; in the introductory references are made to pictures and sculpture in which plant life is depicted and particularly the connection with medical properties; the appraisement of the plant in different countries and association with legendary history. The introduction includes a number of reproductions of early art; the first one shows the cave dwellers; an Assyrian king in a grape arbor in which the date palm is shown and another is a picture in stone of Syrian plants. Illustrations throughout the book are interesting and include many of the drug plants in lore and early historical connections.

Two reprints have been received of articles that appeared in the *Apotheker-Zeitung*—by DR. C. HAHMANN, of the Institute of Applied Botany at Hamburg—one, dealing with Condurango bark and the other on accidental and intentional substitution of herbs, leaf and flower drugs; the number considered represents a long list, among them belladonna, stramonium, hyosciamus, senna, etc.

Bibliography of the publications from the laboratories and clinics of the Peking Union Medical College and Hospital for the period from July 1, 1926 to June 30, 1927. We find in the list some familiar names—K. K. Chen, Bernard E. Read, C. T. Feng, John Cameron, all of whom are occasional contributors to the JOURNAL OF THE A. PH. A. The listing is both in Chinese characters and English titles.

ABSTRACTS OF SCIENTIFIC PAPERS.

COD-LIVER OIL FLAVORING.

Flavoring Medicinals. B. H. SMITH—*Drug Markets*, 23 (1928), 117. Through *Squibb's Abstract Bulletin.* Ways and means of offsetting or making unpleasant taste, bitterness, saltiness or astringency are enumerated. Licorice, sugar and saccharin are most often used in bitter medicinals; for quinine, yerba santa, also sarsaparilla and the "bright" flavors such as tincture of cardamon and the compound spirit of orange are of value. With salines, lemon is particularly useful with Epsom salts; others of value are vanillin, essence of almond, fruits of pineapple, etc. Sugar or glycerin and spicy flavors can be used to advantage for astringents; cinnamon and blends of cinnamon, clove and pimento are recommended for flavoring. To mask the flavor of cod-liver oil, blends of the essential oils are used. Cinnamon and wintergreen or cinnamon with other oils such as clove, mace cardamon, fennel have been suggested. Coriander is especially valuable as a blender with other oils. Cocoa and chocolate have proven very effective in disguising cod-liver oil preparations. For toothpastes with a soapy base a blend of strong flavors is required such as menthol, peppermint, spearmint and anise. In masking the taste of medicinal preparations it is well to remember that certain flavors have precisely the opposite effect, the author notes; as, for example, oil of celery emphasizes the fishy flavor of cod-liver oil. Medicine taken in tablets and aromatic tablets is made more pleasant by spraying the essential oils on the tablets which contain enough starch so that the oil is readily absorbed. An agreeable taste depends upon the use of substances that change the viscosity of the product, as glycerin. The same result, *e. g.*, the delay in the intimate contact with the organs of taste and the less easy spread of the preparation, is obtained by emulsification, for which purpose gum tragacanth or gum acacia, or preferably a mixture of the two is used.—J. P.

ACTIVE PRINCIPLE OF LIVER.

The Liver-Substance against Pernicious Anemia. K. FELIX—Aerztlicher Verein München. meeting (July 7, 1928); through *Münch. med. Wochschr.*, 75 (1928), 1573; through *Squibb's Abstract Bulletin.* The active substance of liver can be isolated to a certain extent, when the water-soluble extracts are separated into various fractions by a procedure worked out in fermentative hydrolysis of proteins. When the histidine fraction here considered is again precipitated under different conditions, a series of inactive accompanying substances can be removed. 50—80 mg. of the preparation thus obtained is as active as 200 Gm. of liver. It gives no biuret reaction and contains no simple peptides. Its *N*-content is 12%. The diazo reaction is the only strong albumen color reaction. A discussion followed at the meeting regarding the various hypotheses of its function in pernicious anemia.—E. G.

CABINET OFFICERS GIVEN RIGHT OF DISMISSAL IN ERGOT SUIT BROUGHT BY IMPORTER.

Justice Jennings Bailey of the District of Columbia Supreme Court, on November 7th, granted a motion of Andrew W. Mellon, Secretary of the Treasury, and William M. Jardine, Secretary of Agriculture, to dismiss a suit for injunction brought against them by Howard W. Ambruster, a New York importer, alleging that the officials were permitting the importation of adulterated and misbranded ergot to the detriment of his business. "To grant the relief sought," said Justice Bailey, "would be to interfere with the discretionary powers of the cabinet officers and would be to substitute the judgment of the court for that vested by law in those officials."